

Inhibit #23



OFFICE OF NAVAL INTELLIGENCE,
WASHINGTON, D. C.

October 17, 1905.

My dear Beyer:

Replying further to your letter of October 5th, I am authorized by the Secretary of the Navy to inform you that the Department authorizes you to publish your book entitled, *The American Battleship in Commission*.

I am sorry to hear of your being in the hospital and hope that you are getting on well. I wish you all success with the publication of your book.

Your manuscript is returned by registered mail.

Very truly yours,

99
485

Station Schroeder

Captain, U. S. N.

Thomas Beyer,
Shipfitter 1st Class, U.S.Navy,
U. S. A. General Hospital,
Fort Bayard,
New Mexico.

OFFICE OF
THE COMMANDER-IN-CHIEF,
UNITED STATES ATLANTIC FLEET.

U. S. FLAGSHIP MAINE.

Navy Yard, New York.

June 10,

(2)

4. It is with pleasure that I note that a book which appears to have merit is about to be published above the signature of one of our enlisted men.

Respectfully,

R. D. Evans

Rear Admiral, U. S. Navy,
Commander in Chief,
United States Atlantic Fleet,

Mr. Thomas Beyer,
Shipfitter, 1st class, U.S.N.
Naval Y.M.C.A.
Brooklyn, N.Y.

Photographic reductions
from original letters.

September 24th 1906

#3

Mr Thomas Meyer,
U.S. Navy

My dear Mr Meyer,

I thank you heartily
for your book
"The American Battle Ships in Commission"
which you were good enough
to send me.

It is most interesting and
entertaining, and will
give people a better

conception of the real Navy
than anything I have seen
in a great while.

You and I love and
appreciate the service
and must do all we
can for it

Yesterday was my
anniversary of fifty-two
years in the Navy.

I am very truly yours
Cing Dewey

Photographic reduction
from original two-
page letter.

THE AMERICAN BATTLESHIPS' CRUISE TO THE PACIFIC (1907-1908).

NAME OF SHIP.	CAPTAIN IN COMMAND.	Length over all.	Breadth.	Rig and Funnels.	BUILT BY	Officers.	Men	Displace- ment (tons).	Horse-power.	Speed (knots).	Year of Commission.	Main Battery.		No. of guns in secondary battery.	Single dis- charge (lbs.).
												In Turrets.	Broad- side.		
Connecticut* Louisiana... Kansas... Vermont...	H. Osterhaus.....	456	77	2 masts 3 funnels	U. S. Government, Brooklyn Navy Yard	41	855	16,000	16,500	18.78	1906	4 12-in. 8 8-in.	12 7-in.	44	7,380
	R. Wainwright.....	456	77	2 masts 3 funnels	Newport News S. B. Co. Newport News, Va...	41	840	16,000	20,748	18.82	1906	4 12-in. 8 8-in.	12 7-in.	38	7,380
	C. E. Vreeland.....	456	77	2 masts 3 funnels	New York S. B. Co., Camden, N. J.....	41	809	16,000	19,545	18.09	1907	4 12-in. 8 8-in.	12 7-in.	38	7,380
	W. P. Potter.....	456	77	2 masts 3 funnels	Forc River S. B. Co., Quincy, Mass.....	41	840	16,000	17,892	18.33	1907	4 12-in. 8 8-in.	12 7-in.	46	7,380
	Georgia.....	H. McCrea.....	441	76	2 masts 3 funnels	Bath Iron Works, Bath, Maine.....	40	772	14,948	25,088	19.26	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600
Virginia.....	S. Schroeder.....	441	76	2 masts 3 funnels	Newport News S. B. Co. Newport News, Va...	40	772	14,948	22,841	19.01	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600
New Jersey..	W. H. H. Southerland	441	76	2 masts 3 funnels	Forc River S. B. Co., Quincy, Mass.....	40	772	14,948	23,089	19.18	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600
Rhode Island	J. B. Murdock.....	441	76	2 masts 3 funnels	Forc River S. B. Co., Quincy, Mass.....	40	772	14,948	20,310	19.01	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600
Minnesota...	J. Hubbard.....	456	77	2 masts 3 funnels	Newport News S. B. Co. Newport News, Va...	41	840	16,000	20,235	18.85	1907	4 12-in. 8 8-in.	12 7-in.	38	7,380
Ohio.....	C. W. Bartlett.....	394	72	2 masts 3 funnels	Union Iron Works, San Francisco, Cal...	41	759	12,500	16,220	18.00	1904	4 12-in.	16 6-in.	24	5,000
Maine.....	G. B. Harber.....	394	72	2 masts 3 funnels	Wm. Cramp & Sons, Philadelphia, Pa....	41	772	12,500	15,603	18.00	1902	4 12-in.	16 6-in.	22	5,000
Missouri,....	G. A. Merriam.....	394	72	2 masts 3 funnels	Newport News S. B. Co. Newport News, Va...	40	739	12,500	15,845	18.15	1903	4 12-in.	16 6-in.	20	5,000
Alabama.....	T. E. D. W. Veeder..	374	72	2 masts 2 funnels	Wm. Cramp & Sons, Philadelphia, Pa....	34	679	11,552	11,207	17.01	1900	4 13-in.	14 6-in.	24	5,800
Illinois.....	J. M. Bowyer.....	375	72	2 masts 2 funnels	Newport News S. B. Co. Newport News, Va...	34	656	11,552	12,757	17.45	1901	4 13-in.	14 6-in.	24	5,800
Kearsarge....	H. Hutchins.....	375	72	2 masts 2 funnels	Newport News S. B. Co. Newport News, Va...	39	651	11,520	11,788	16.82	1900	4 13-in. 4 8-in.	14 5-in.	20	6,100
Kentucky....	W. C. Cowles.....	375	72	2 masts 2 funnels	Newport News S. B. Co. Newport News, Va...	35	651	11,520	12,179	16.90	1900	4 13-in. 4 8-in.	14 5-in.	30	6,100

TOTALS:—16 First-class battleships; 629 officers; 12,179 men; 223,436 tons displacement; 281,847 horse-power. Batteries:—16 13 inch; 48 12-inch; 80 8-inch; 60 7-inch; 124 6-inch; 28 5-inch. Total guns main battery, 356. Total weight single discharge, main battery, 102,100 pounds. Total number of guns, secondary battery, 504. * Horse-power of Connecticut is that specified in builders' contract.

CRUISE OF THE AMERICAN BATTLESHIP



Route to the Pacific.....
 Proposed Trip Home.....
 Practice Ground (Magdalena Bay), ★

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Approximate Distances miles

Hampton Roads—Trinidad	1,780
Trinidad—Rio de Janeiro	2,900
Rio de Janeiro—Punta Arenas	2,230
Punta Arenas—Callao	2,850
Callao—Magdalena Bay	3,010
Magdalena Bay—Honolulu	2,740
Honolulu—Tokyo	3,800
Tokyo—Manila	1,800
Manila—Straits Settlement	1,720
Straits Settlement—Aden	4,200
Aden—Port Said	1,500
Port Said—Gibraltar	2,000
Gibraltar—Hampton Roads	3,500
Total route of cruise	34,030
Magdalena Bay—S. Francisco	1,000



REAR-ADMIRAL EVANS' FLAGSHIP, "CONNECTICUT."

THE
American Battleship
AND
Life in the Navy

ALSO

HUMOROUS YARNS AS TOLD BY A BLUEJACKET

(THE AMERICAN BATTLESHIP IN COMMISSION)

BY THOMAS BEYER

Published by Special Authority of U. S. Navy Department.
Endorsed by Admiral Dewey and Rear-Admiral Evans

CONTAINING

Latest tables of Battleships, Armored and Protected Cruisers,
Monitors, Vessels Built and Building, showing Size, Dis-
placement, Tonnage, Caliber and Number of Guns,
Gun Power, Armor and Number of Officers and Men

ILLUSTRATED WITH

Forty full-page copper-plate half-tones and special double-page map,
lithographed in four colors, showing route of the fleet to the
Pacific and the probable return trip via Suez Canal,
with distances between stopping-points



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The Nation

“IN time of peace, prepare for war.” So runs the old adage. It follows, therefore, that Congress should appropriate sufficient money to build and properly maintain a powerful navy, as well as to strengthen our coast defenses wherever needed. If, as it is often asserted, the United States has assumed the position of leader among the Powers, then it is all-important that we demonstrate our ability to carry out the obligations imposed by the new world policy. To be fully prepared for any emergency, is in itself a guarantee that peace will not be disturbed. A “shore diplomat” uses his pen and diplomacy to avert war; the “sea-going diplomats” (battleships) use their twelve and thirteen-inch guns to make peace. Historians write history, but Navies and Armies (or the men-behind-the-guns), make it. Under present conditions, in the event of international complications, the navies are destined to play a most important part. How essential, then, that the American fleet should be second to none.

The recent action of the Administration, in despatching the fleet to the Pacific, the greatest battleship cruise of modern times, must be regarded as a masterstroke of policy, because it establishes the significant fact that the United States can and will maintain its flag and national supremacy on every sea.

—THE PUBLISHERS.

*To the relatives and friends
of the American Bluejackets
and all who are interested in the
Great United States Navy,
this book is respectfully dedicated.*

THE AUTHOR.

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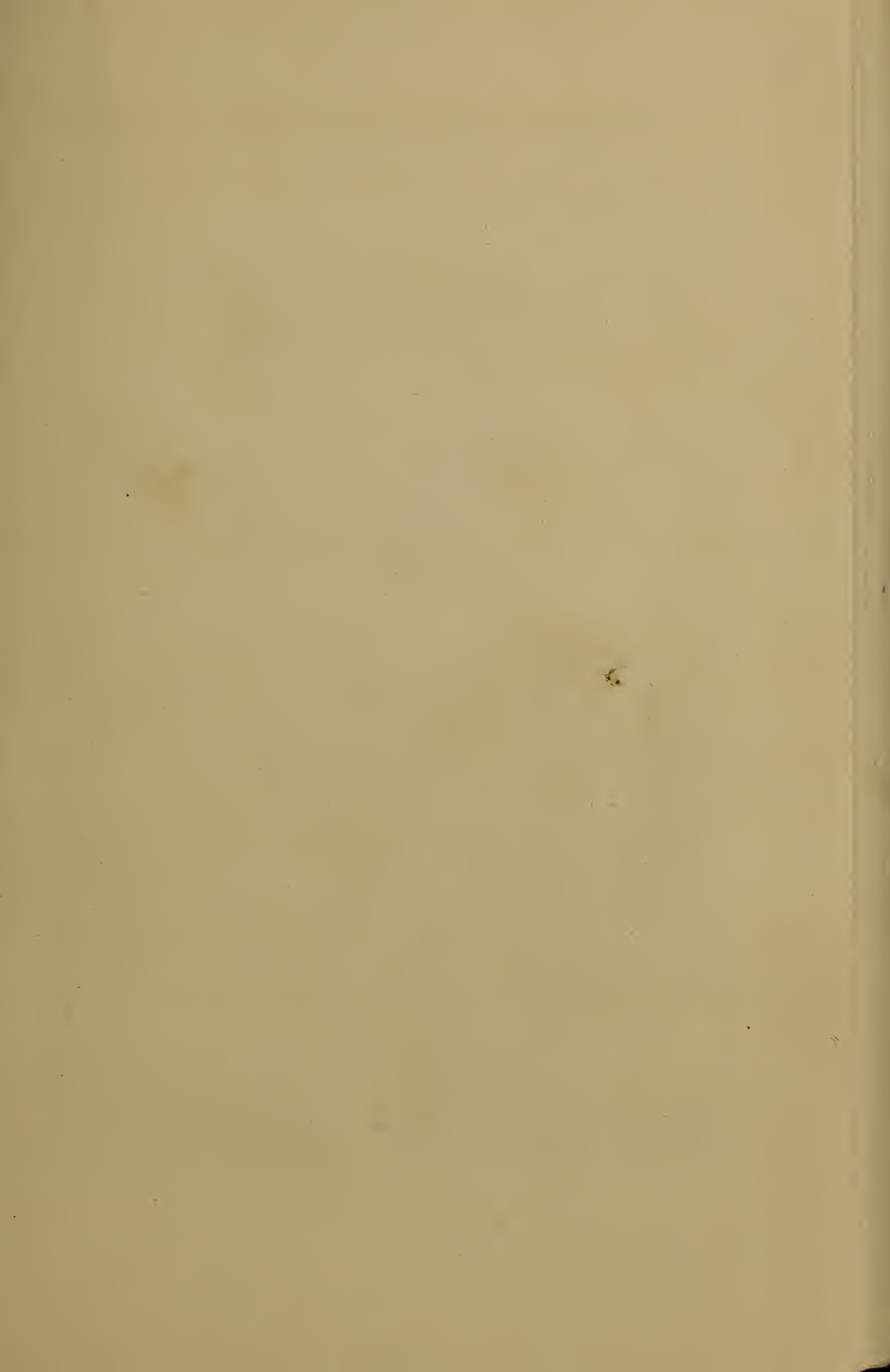
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THOMAS BEYER.
SHIPFITTER 1ST CLASS, U. S. N.

CHAPTER I

THE NAVY—BUILDING AND COMMISSIONING— OFFICERS OF THE SHIP—HOW OFFICERS ARE MADE

THE NAVY

GREAT pride and interest are taken in our navy. The results of the Russian-Japanese war have plainly demonstrated that a strong and efficient navy is the most important factor in time of war. Folks at home read about the achievements of a certain ship while at the same time many do not realize what a grand array of warships are owned by Uncle Sam.

A person may gaze at the photograph of a battleship or cruiser or he may see one lying at anchor, but in explaining the difference between their fighting qualities, the average landsman would be "at sea." It requires personal experience and study to enable one to comment intelligently upon the service.

A warship is a floating diplomat. In moving

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about singly or in fleets they command in many ways, respect for the country which they represent. Our interests in foreign ports are constantly on the increase as the Export Statistics will show ; and now that Uncle Sam is the legal guardian of the Philippines, Cuba, Porto Rico, Hawaii and the Panama Canal, a large and efficient navy is needed to protect American interests.

A large navy does not signify a strong one ; should the personnel be lacking in training, skill and discipline, the ships would be of little value. In time of action it would prove an easy prey to the enemy whose ships and men had a superior training. Millions of dollars are spent annually to keep the fighting qualities of both ships and men up to the highest standard, and every dollar of this money is well invested. A powerful navy is one of the most valuable assets a nation can possess. When the war clouds are gathering the strength of the navy regulates the ultimatum.

Washington, D. C., is the official headquarters of the United States Navy. From there all orders, movements of ships, officers, enlisted men and stores, are directed, and with the assistance of the many admirals and captains who are in command of the various fleets, squadrons, divisions and single ships, these orders are carried out to the letter.

The Navy Department is divided into different

bureaus; such as the Bureau of Navigation, Construction and Repair, Equipment, and Steam Engineering. The duties aboard ship and of the different bureaus are thus divided in order to simplify matters.

Ships of the navy are placed out of commission regularly, at the different navy-yards maintained by the navy. When a ship is placed out of commission she is thoroughly overhauled and equipped with the latest appliances. Warships are also built at the navy yards by the Government; the *Connecticut*, a sixteen-thousand-ton battleship, being one of them. This ship was built at the Brooklyn Navy Yard.

Several of our warships have been in commission ten years before being placed out of commission. When a ship is recommissioned she is better equipped than when new, for the reason that she is more modern, as improvements which have come into use recently are installed.

The entire navy is conducted on the same principle. The Navy Department prints a book which contains the rules and regulations governing the United States Navy. From the color of its binding this book is known as the "Blue Book." Every detail of the service is contained within its pages. From time to time, as the service may require, changes are made in the rules and regulations.

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Some people may be inclined to think that naval officers have one continuous round of pleasure with nothing to do but travel around the world at the expense of the Government. Such an erroneous impression could be entertained only by one unacquainted with the service. All naval officers have arduous tasks to perform before ships are entrusted to their command. After six years of continuous study, midshipmen are commissioned ensigns; this being the lowest rank of commissioned officer. Line officers are the regular commissioned officers of the navy who have gone through the prescribed course at the Naval Academy. This also includes the warrant officers who have successfully passed the examination for ensign. Officers are gradually promoted in turn; a special examination being taken for each graduation. A Line officer must have been in charge of every department of a warship, such as the Signal, Navigation, Ordnance, and Executive Officer, before given command of a large ship. Many admirals in foreign navies have seen far less service than our commanders.

Regarding the benefits that an enlisted man derives from the service, they are many. A blue-jacket is well taken care of, and best of all, he is well paid. The opportunities for advancement in the navy are greater to-day than at any previous time. Many new rates of petty officers have been

recently created and more are being added from time to time as required. These new rates, with the old ones, have advanced many of the crew to the rank of petty officer. The initial pay of a petty officer varies from thirty to seventy dollars per month, this, however, does not include his ration and extra pay, as gunpointer, lamplighter, messman, or continuous service benefits.

A large number of new battleships and cruisers have been recently completed and commissioned. The majority of these ships carry a complement of over eight hundred men, thus causing many openings for advancement. When a member of the crew is rated a petty officer more work is not expected of him because his pay has been increased; he is rated a petty officer for the reason that he has acquired sufficient knowledge to enable him to command a more responsible position. As a general rule the higher an enlisted man advances the less manual labor he is required to perform. A petty officer is clothed with considerable authority, and many responsible duties are assigned him. Naval life is very congenial to the enlisted man and he gains a vast amount of knowledge and experience in his travels. Most important of all, he is well disciplined.

Occasionally a young man may enlist who turns out to be an undesirable recruit; he may often cause

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discontent among other members of the crew. Some write home to their parents condemning the service, and in some instances their home papers publish the contents of their letters and cause a false impression to be formed regarding the life of the enlisted men. Were it taken into consideration that the authors of these letters as a rule are recruits who have just joined the service and know but little of it owing to inexperience, little faith would be placed in the articles published. When a young man writes home informing his relatives or friends that he has been an ordinary seaman two years, and that others who have less service to their credit are being promoted to petty officers, it is quite logical that there is something wrong. The "growler" (better known as a sea-lawyer) never explains the cause. Those who are tardy in being promoted are sleeping while their more industrious and studious shipmates are advancing over them. The old saying that "Every man makes his own career," is quite true of the men in the navy.

One may join the navy with false ideas of life aboard ship. Some expect to be given a private room and even a servant to wait upon them. Cases of this kind are rare, however, as most of the recruits soon adapt themselves to the routine of the service. When a recruit persists in being obstinate he will either desert or be dishonorably discharged,

for under no circumstances does Uncle Sam wish to retain men of this character.

Some young men enlist without the consent of their parents. This is usually due to the objections of the parents. It seems that the names of warships and talk of big guns give many people peculiar notions about the service; this is particularly true of women.

When an accident occurs in the navy it is looked upon as something awful by the shore folks. Were it taken into consideration that there are over three hundred ships on the Naval Register the majority of which are in commission, it would be plainly seen that naval life is no more dangerous than other vocations ashore. The majority of accidents in the navy occur under unavoidable circumstances, and at the same time a great lesson is learned from each. The experience thus gained is utilized to prevent a repetition of similar occurrences. The warships in commission hold regular target practice and have speed trials each year, all of which involves a certain amount of risk.

There are over one hundred different rates aboard a battleship. Members of the crew are constantly being transferred, discharged or retired, causing rapid promotion among the crew. During first enlistment a majority of the enlisted men are rated petty officers. Many of the author's shipmates

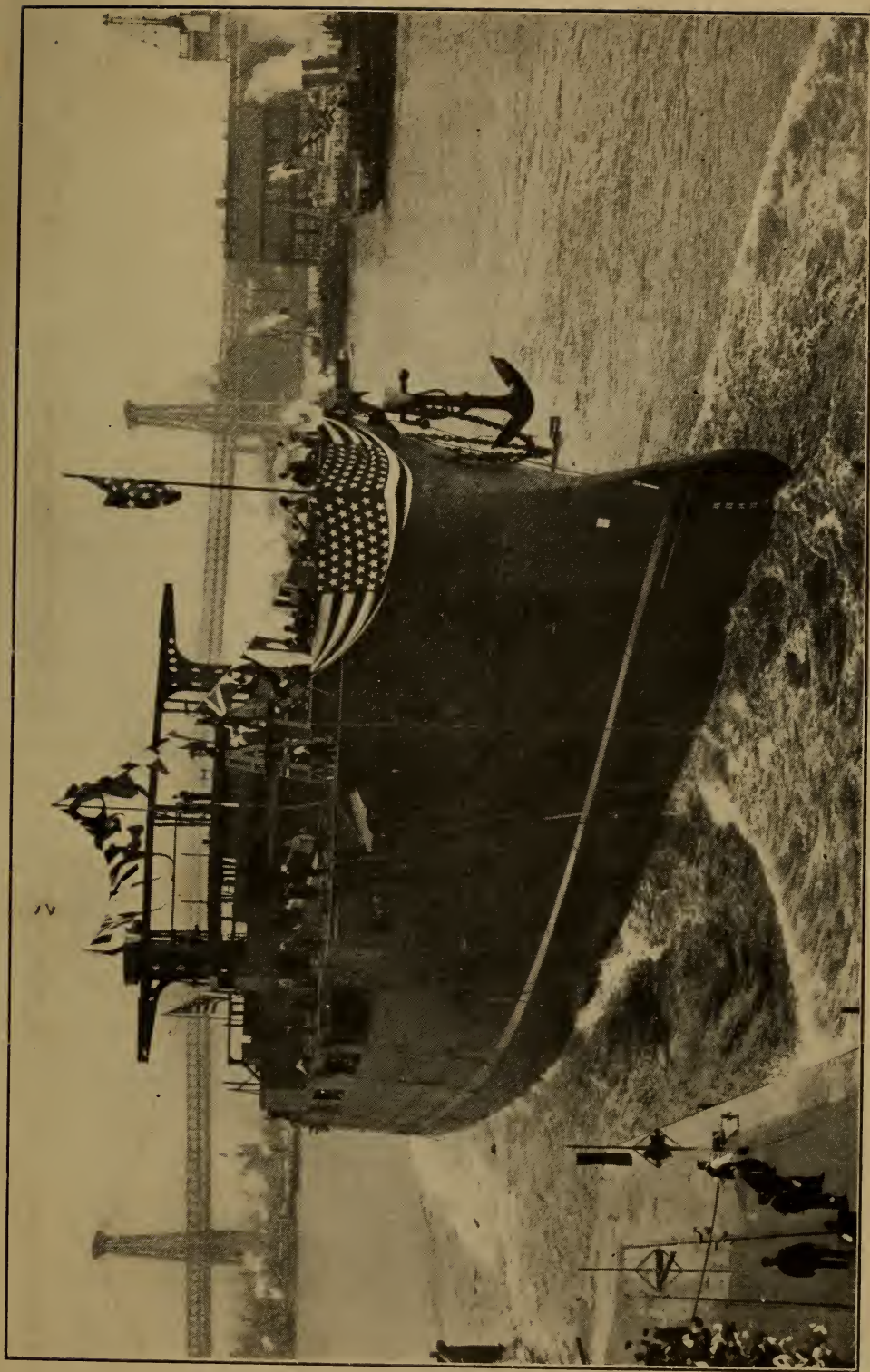
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aboard the *Oregon* can verify this statement, for many of them were made petty officers during first enlistment. When the *Oregon* won the Gunnery Trophy, several of the gunpointers were on their first enlistment; a large number of them having never seen salt water until enlisting. Many naval officers can look back to the day they entered the service with the lowest rating on the muster-roll. The naval regulations allow a warrant officer to become a regular commissioned officer of the Line, that is, provided he passes the examination successfully. This examination is quite severe and requires a large amount of practical and theoretical knowledge to enable one to pass it; several warrant officers have already passed this examination and are now commissioned officers. Upon passing successfully they are given the rank and pay of an ensign.

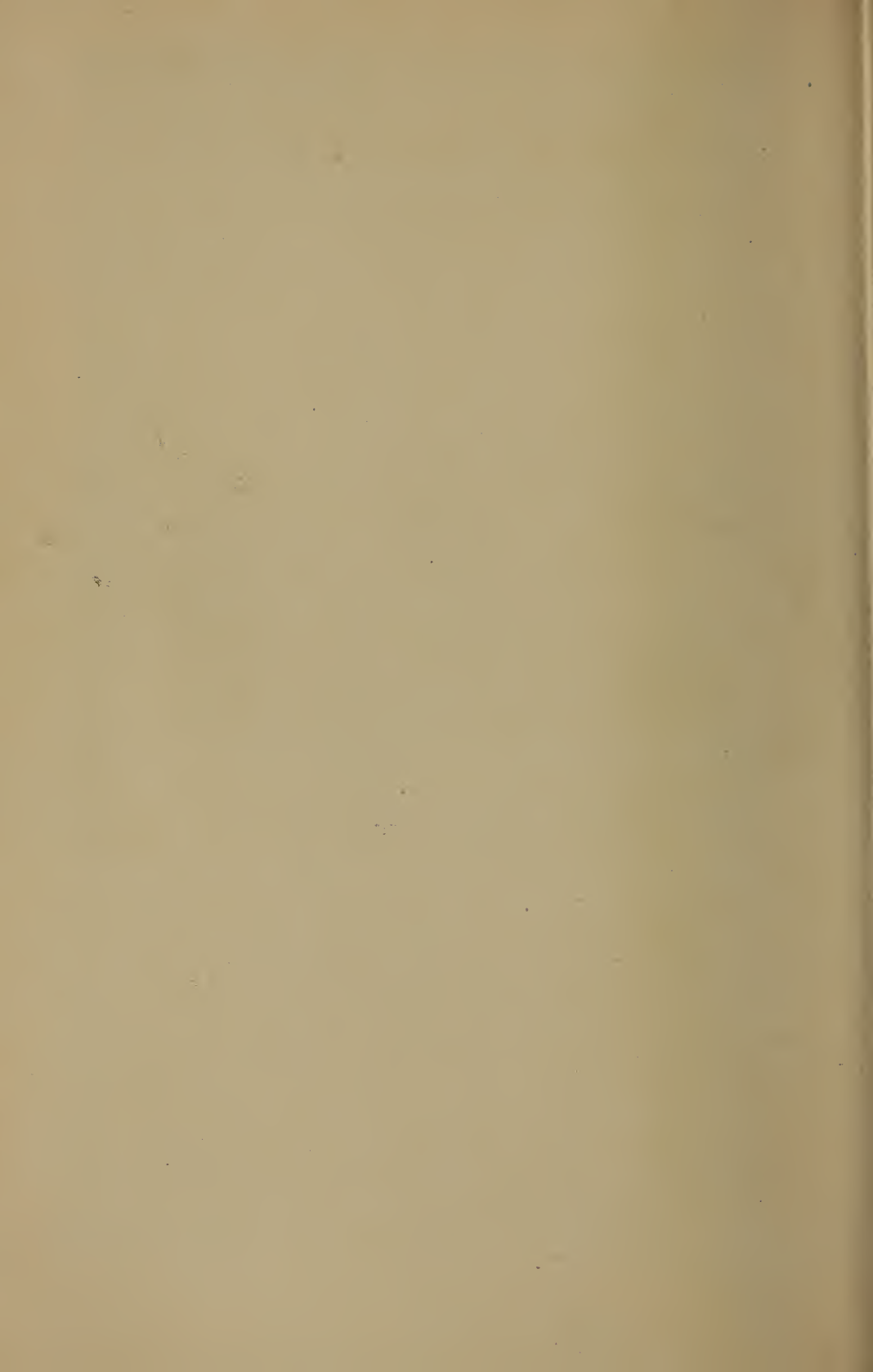
The present law allows twelve warrant officers to become commissioned officers each year. Over ninety per cent of the warrant officers are promoted from the ranks, and the day is not far distant when we will have captains and admirals in the navy who were once enlisted men.

BUILDING AND COMMISSIONING

Drawing up the plans of a battleship is an exceptionally arduous task, there being many difficulties to overcome. The first thing to be considered is



LAUNCHING OF THE U. S. S. CONNECTICUT. This ship was built by the Government at the Brooklyn navy-yard.
Copyright, 1904, by Enrique Muller.



the displacement, which is equal, of course, to the weight of the vessel. Displacement signifies power, which is equalized; speed, steaming radius, armor and armament are provided for according to the type of ship desired. Should a warship of high speed be designed, the armor, armament, etc., would be lessened accordingly. When the displacement has been determined, all plans and specifications are made out accordingly, for the armor, armament, speed, steaming radius, fuel and water supply, living quarters, and in fact every detail of the ship is considered and provided for. The weights and spaces of all parts of the ship are equalized, so that when the ship is completed she will not exceed the displacement she was designed after.

From year to year battleships are constantly being increased in size, speed, armor and armament. Much experience, skill and money are needed to acquire these valuable points of advantage. Speed alone is an important factor in time of battle. Take for instance, two opposing fleets, one having an average displacement of fourteen thousand tons and a speed of sixteen knots, the other having the same displacement but a speed of eighteen knots, the fleet having the higher rate of speed has a decided advantage over the other. To increase the speed of a battleship an extra knot, additional

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horse-power is required; this necessitates an increase in the power of the boilers and engines, also of the fuel and water supply.

When Congress has appropriated the money to build a warship, the final plans are drawn up and the building of the ship is let out by contract to the lowest bidder. All materials used in the construction of the ship must be of home manufacture, and the successful bidder agrees to build the vessel strictly according to contract; the specifications, of course, contain all details pertaining to the construction of the ship.

Formerly the Government paid a bonus for each knot or part thereof in excess of the speed specified in the contract, but this system has been discontinued. When it is taken into consideration that the contract price of a battleship varies from three to eight million dollars, which is, of course, regulated by the displacement and type of the ship, great caution must be exercised on the part of both the builders and the Government. The penalty imposed for failure to develop the required speed during the official trial trip of our late type of battleship, is at the rate of \$50,000 for the first quarter knot under the contract speed, \$100,000 for the second quarter knot; should the speed be more than half a knot under that specified in the contract, the ship would

be rejected, or accepted at a greatly reduced price, at the option of the Navy Department.

Piece by piece the huge fighting machine is assembled; several thousand workmen are at work on the ship itself or in the workshops nearby. Every labor-saving device that can be utilized is taken advantage of by the builders. Only a short while ago all riveting, drilling, etc., on the ship was performed by hand; now most of it is done by automatic tools of different kinds; riveters, chippers and drillers do most of their work with tools which are operated by compressed air. Most of these tools are of light construction, so that they can be transported to any part of the ship; an air hose connects them with the compressed air system which is set up temporarily in and about the ship.

There is but little opportunity for palming off on the Government poor work or materials, because the plans and specifications state precisely the quantity and quality of all materials used. In addition to this, naval officers are detailed as inspectors at the different shipbuilding plants where warships are under construction. Should the ship be faulty in construction, defects would appear when the ship is put through the various tests at the trial trip.

When the ship is ready for launching, many

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preparations are necessary. The launching of a battleship is quite an event, and thousands of spectators assemble to witness it. All of our battleships are named in honor of States, with the exception of the *Kearsarge*. When the day for launching arrives, a delegation is on hand to represent the State after which the vessel is named, and some fair daughter of the State (usually the Governor's daughter) has the honor of christening the vessel. As the ship starts to move, the sponsor dashes a bottle of wine against the ship's bow and exclaims: "I christen thee ——," at the same time pronouncing the ship's name. The ship is launched at high tide. When everything is in readiness, all blocking is released and suddenly she starts to move. It is indeed a grand sight to witness that huge hulk of steel rushing onward to the water which is to be her home. She strikes the water with a splash amid a din of cheers and whistles.

When the armored cruiser *Washington* was launched a new device was introduced. This ship was built in a building with a glass roof, which enabled the builders to work during inclement weather. This ship was launched automatically, all blocking was released simultaneously, and the ship was given a start with hydraulic rams which were located at the head of the launching-ways.

When a warship is launched she generally repre-

sents a mere shell, though in some cases the builders may partly equip her before launching. After she is launched tugs stand by to tow her to the berth where she is finished and made ready for the trial trip. The builders have everything in readiness; selected men are at the engines and in the fire rooms, and in fact everything is done to increase the power and speed of the ship. A certain course is laid out and marked at intervals by the Government stake-boats. Several naval officers are detailed on the trial board to look after Uncle Sam's interests.

During the trial trip every one aboard is held in great suspense as the ship is throbbing and trembling from stem to stern while she speeds through the water. The stake-boats being anchored at certain intervals, enable the trial board to accurately ascertain the ship's speed.

Recently a new method of holding trial trips has been introduced, known as the Standardized Screw method. In the vicinity of the throttle of each main engine is a counter connected with the main engine. This counter registers accurately each revolution made. The ship is then run many times over a carefully measured mile course which enables the trial board to ascertain the exact number of revolutions both engines must make in order to give the speed specified in the contract. When

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the exact number of revolutions the engines must average to give the ship the required speed is determined, the ship is then run for four consecutive hours in the open sea under full power. After the full-speed trial comes the endurance trial, when the ship is run full speed for twenty four consecutive hours. In most every instance the ship exceeds the speed specified. After the trial trip she returns to the harbor with brooms flying from the masts; sometimes the ship's speed is painted on the smokestacks.

After the speed trials are held another series of tests follow. The ship steams ahead at different speeds and the engines are suddenly reversed to ascertain in what space and time the ship can be stopped. The steering gear, water tight doors, and all parts of the ship are also carefully tested under different conditions. The results of these various tests are of great value for future reference, for during the ship's career emergencies may arise when the information gained can be put to practical use.

When the ship has successfully passed the trial trips she returns to the shipyard, where all defects are remedied and the furnishings and all necessary equipments are installed. When completed the ship is ready to be commissioned. The ship's builders render a monthly report to the Navy De-

partment of the percentage of progress made while the ship is under construction.

Placing a battleship in commission is a very quiet and simple affair. Shortly before the ship is commissioned a small portion of the crew is sent to the ship; these are chiefly from the engineer's department, which enables them to become familiar with the machinery. The balance of the ship's complement has been previously selected and held in readiness for the day when they will be ordered aboard.

The captain musters all hands aft on the quarter-deck and reads to them his orders, which state that the Navy Department has ordered him to assume command of the ship. The orders on the commissioning having been read and Old Glory and the commission pennant hoisted, the ship is then entered upon the "Active List" of naval vessels.

When a ship is commissioned she is taken in hand by the officers and crew and "broken in." Fire, collision and other drills are frequently held, and the ship is taken out for short cruises to familiarize the crew with their new home and duties.

The ship is again put through a series of severe tests, the most important being the firing of the ship's battery simultaneously to ascertain the concussion. The builders are held responsible for any defects which may arise during a specified period,

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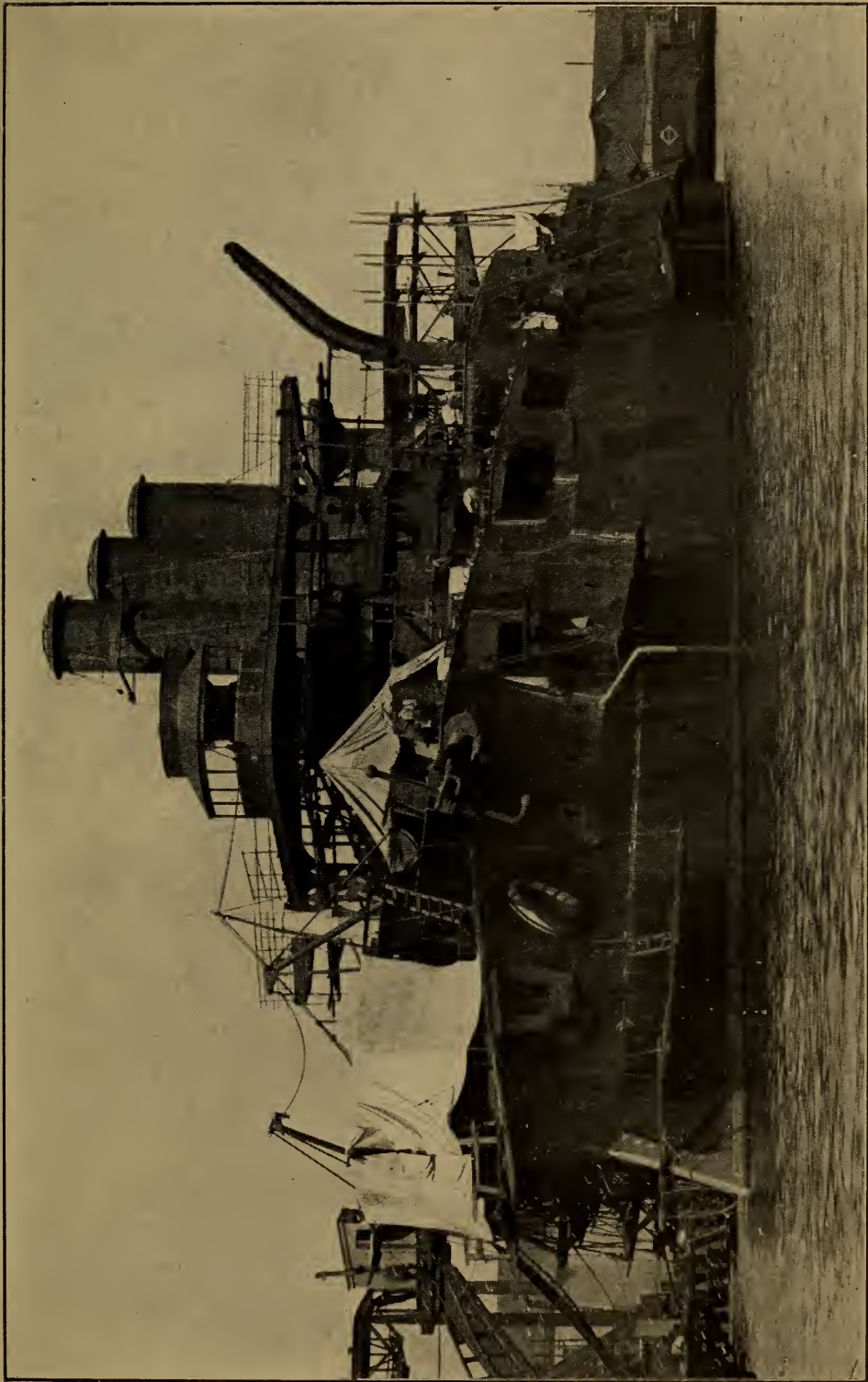
as a final payment is withheld until the ship is accepted by the Government. After a short period of patience and toil the ship is finally "broken in" and ready for assignment to duty.

OFFICERS OF THE SHIP

Admiral. The warships in commission are divided into fleets. When a fleet consists of a large number of ships it is divided into squadrons and divisions. Each squadron or division is under the command of an admiral, while the entire fleet is under the command of the senior admiral, who is known as the Commander-in-Chief.

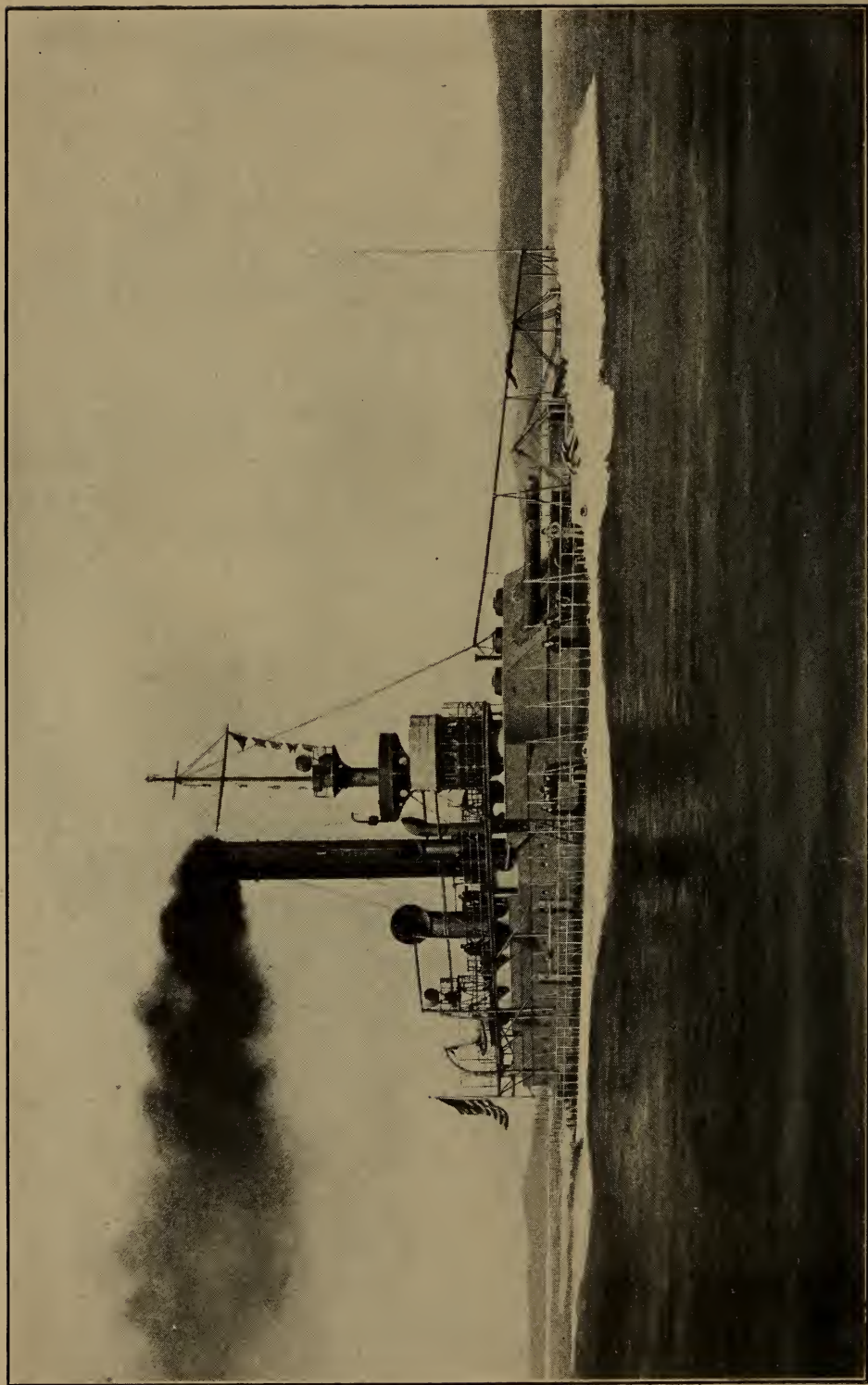
When at sea the admiral often puts the entire fleet through a series of maneuvers, all of which require great tact and skill. It is an imposing sight to witness a fleet of large warships maneuvering about with clockwork-like precision. In time of action prompt maneuvering is one of the most important factors. The orders are signaled from the flagship, each ship of the fleet keeping a keen lookout and obeying all signals promptly. The admiral has a staff of officers who assist him in many ways, for the duties of an admiral are of a varied nature.

The ships of the fleet are inspected regularly by the admiral and his staff; every nook and corner, and the ship's personnel is thoroughly inspected. In time of war the greatest responsibility rests upon



A BATTLESHIP UNDER CONSTRUCTION. After a battleship is launched, much work is required to complete her.

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A MONITOR AT SEA. Battleships and armored cruisers are taking the place of the monitors.

the admiral. Should communication with Washington be impossible the admiral has to use his own discretion according to the circumstances of the case.

When two admirals are together in a fleet the senior admiral would display from his ship a blue flag, and the other would use a red flag; should there be three admirals together, the junior admiral would display a white flag. Upon being separated from the fleet the admiral in command of any squadron or division would then hoist his senior flag.

Captain. The captain is in command of the ship to which he is assigned and is held responsible for the ship in general. The captain and admiral both have their own private quarters, each having his own cook, steward and mess attendants; they mess in their respective cabins. The captain is known as the Commanding Officer and is clothed with great authority. Should two or more ships be together with no admiral among them, the senior captain present would then be acting admiral. Both the captain and admiral have their own boats for their personal use. At the bow of the admiral's launch, or oared boat, are two gilt stars which signify admiral's barge. At the bow of the captain's gig is a long gilt arrow which signifies commanding officer's gig.

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All promotions of the enlisted men are made upon the captain's indorsement; the other officers in charge of the different departments and divisions do the recommending. During battle, important maneuvers, entering or leaving port, the captain remains on the bridge. The only real difference between a captain and a commander is that the former is of a higher rank and has command of a larger ship. Battleships and armored cruisers rate a captain.

Executive Officer. This officer is the right-hand man of the captain and has complete charge of the discipline and routine of the ship. He is also equipment, and construction officer. All stores issued out and repairs made on the ship, except those of the engineer's, navigator's, and ordnance departments, are under his supervision. The executive officer attends to an extensive correspondence which includes quarterly reports, recommendations promoting the crew, and the many other details of the daily routine of the ship.

Three yeomen assist the executive; two for his office work, the other being assigned charge of the equipment, and construction accounts. Stores, tools and materials of every description are constantly needed for the ship. Each quarter, the ship is allowed a certain amount of stores which

are served out when needed for use. In this way the executive exercises great care that no stores are wasted. The executive has the ship made ready for inspection and kept in good condition at all times.

On Sunday morning the captain inspects the entire ship and crew. The executive officer generally ranks next after the captain. When dining in the wardroom this officer sits at the head of the table, as he is the ranking officer.

Engineer Officer. The senior engineer officer is in charge of the engineer's department and is responsible for all the machinery operated by steam power, also all compartments, double bottoms, piping and valves within the boundaries of the engineer's department. The machinery of a battleship is no small item. The labor, patience and time occupied in keeping it in order is enormous. A large force of mechanics, firemen and coalpassers are attached to this department. An accurate log is kept wherein an account of all coal and water used, also every minor detail of the department is recorded. The senior engineer is assisted in his duties by one or more junior engineer officers and the regular warrant machinists. These junior officers, with the warrant machinists, stand regular

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steaming watches at sea and perform the regular day's duty when in port.

Great care must be exercised with the machinery at all times. When the ship has completed a voyage many repairs are sometimes necessary. All our large ships are equipped with powerful machinery, and should any work be done carelessly or incompetently a serious accident might be the result.

Navigating Officer. This officer has charge of the navigation of the ship and is responsible for all compasses, steering-gear and signaling apparatus. The navigator has an office of his own, also a yeoman to perform the clerical work. The navigator has charge of the ship's log; everything pertaining to the ship, such as amount of coal and water on hand, ship's draught, speed made, and position, are entered in the log book.

The smooth log is made up regularly and signed by the watch officers, navigator and captain, and forwarded to the Navy Department at intervals. Should a ship be lost the quarterly reports and smooth copies of the various logs would enable the Department to know all about the ship up to the end of the quarter prior to her loss.

When the sailing orders are received the navigator takes his charts and lays out the course of

the ship. All the electrical apparatus of the ship, such as search lights and electrical machinery are in charge of the navigator. On the smaller type of ships the navigator is also the ordnance officer.

Ordnance Officer. This officer has charge of all guns, magazines, torpedoes, ammunition, ammunition hoists and their many appurtenances. The greatest care is exercised with the ordnance of the ship. The guns are kept in the best of condition, powder tested regularly and in fact every detail attended to. This is extremely necessary, for should an emergency arise, the guns of the ship must be ready for instant use.

Target practice is held regularly with the ship's battery and a good score at target practice is quite a feather in the ordnance officer's cap. An enormous amount of ordnance paraphernalia is required aboard ship. Several of our battleships are equipped with a battery consisting of seventy-four guns of varied calibers. If all the guns were fired simultaneously, nearly four tons of projectiles would be hurled through the air. The total weight of projectiles fired from a battleship in battle would equal the tonnage of an average gunboat.

Medical Officer. A complete medical staff consisting of one senior surgeon, one junior surgeon,

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one hospital steward and the hospital apprentices is carried. Special quarters are provided for the sick-bay or ship's hospital. The sick-bay adjoins the dispensary and contains a number of berths and the operating table.

Every morning the bugler sounds sick call and those wishing to interview the doctor report at the sick-bay. Should the complaint be of a serious nature the patient is put on the sick-list and excused from all duty. Often during an emergency, operations are performed aboard ship. When convenient a serious case is transferred ashore to some naval hospital for further treatment. When on a foreign station the doctor may recommend that patients be sent home for further treatment should circumstances warrant it.

Pay Officer. The pay department issues money, clothing and rations. The crew is paid monthly, each member having a pay number. On pay day the crew lines up at the pay office and as each person is paid he signs for the money received. At the end of each quarter the crew signs the quarterly accounts, a duplicate of which is forwarded to the Navy Department. It is quite a task to keep the accounts owing to the fact that constant changes are taking place, resulting from transfers and promotions.

The crew is subsisted by the pay department, a commissary steward being in charge. A large amount of money is handled aboard a battleship. The crew is paid regularly and an enormous quantity of stores and provisions is purchased from private firms ashore. Much of the funds handled by the paymaster consists of navy pay checks. The commissary store is also managed by the pay department, where articles such as tooth powder, soap, etc. are sold to the crew at a small advance over the cost price.

The paymaster, who is placed under heavy bonds, is responsible for everything pertaining to his department. Should a member of the crew wish to make an allotment to his folks he can do so. The amount allotted each month is then deducted from his accounts and forwarded regularly to the person in whose name the allotment is made. A pay clerk and three yeomen assist the paymaster with his duties.

Other Officers. There are many other officers who stand regular watches besides being in command of their respective divisions and batteries. At all times, whether the ship is at sea or in port, there is one or more officers on watch. The senior officer on watch is known as the officer-of-the-deck and his orders are law ; for he represents the captain. This,

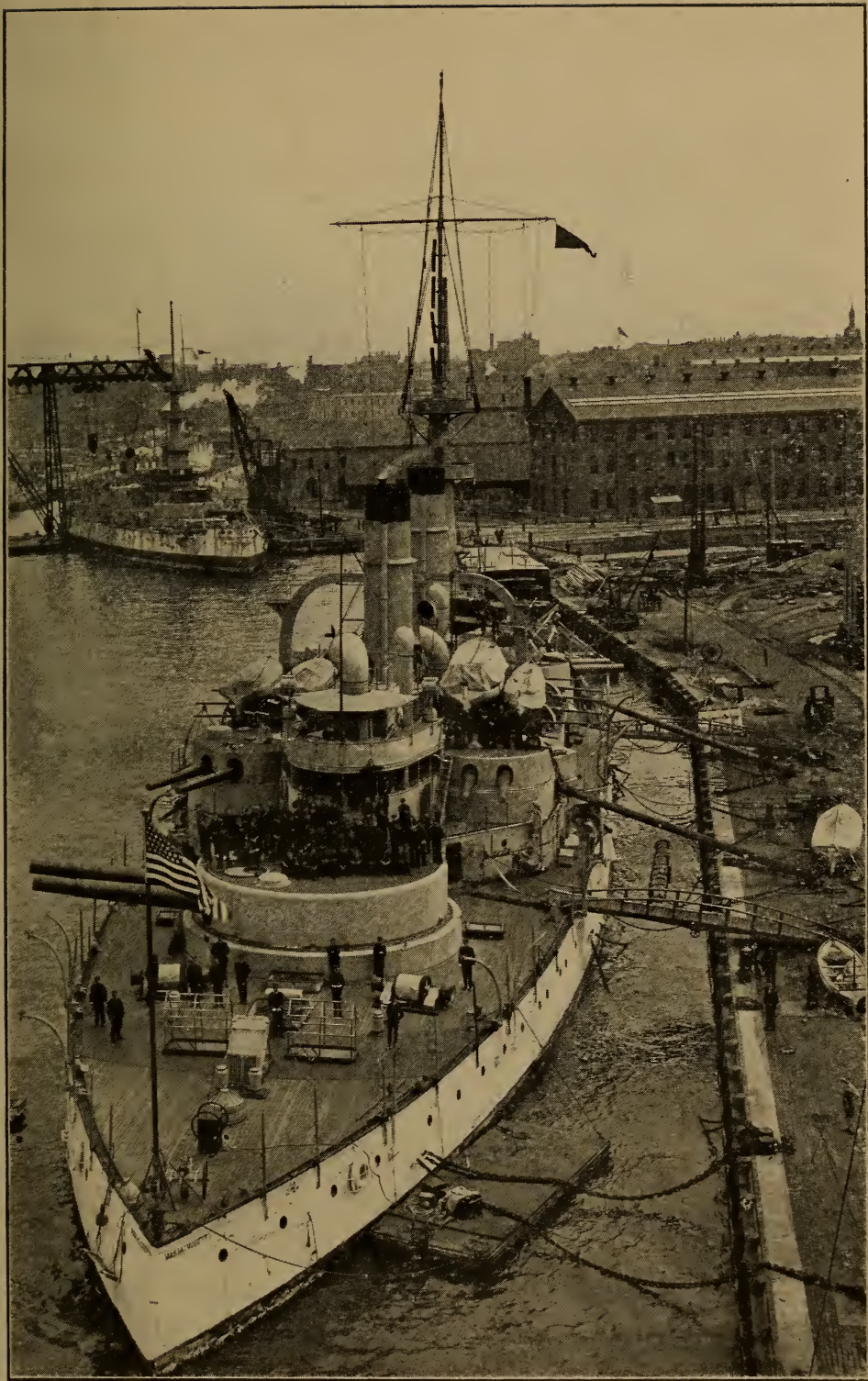
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however, does not include the engineer's department which has a system of its own.

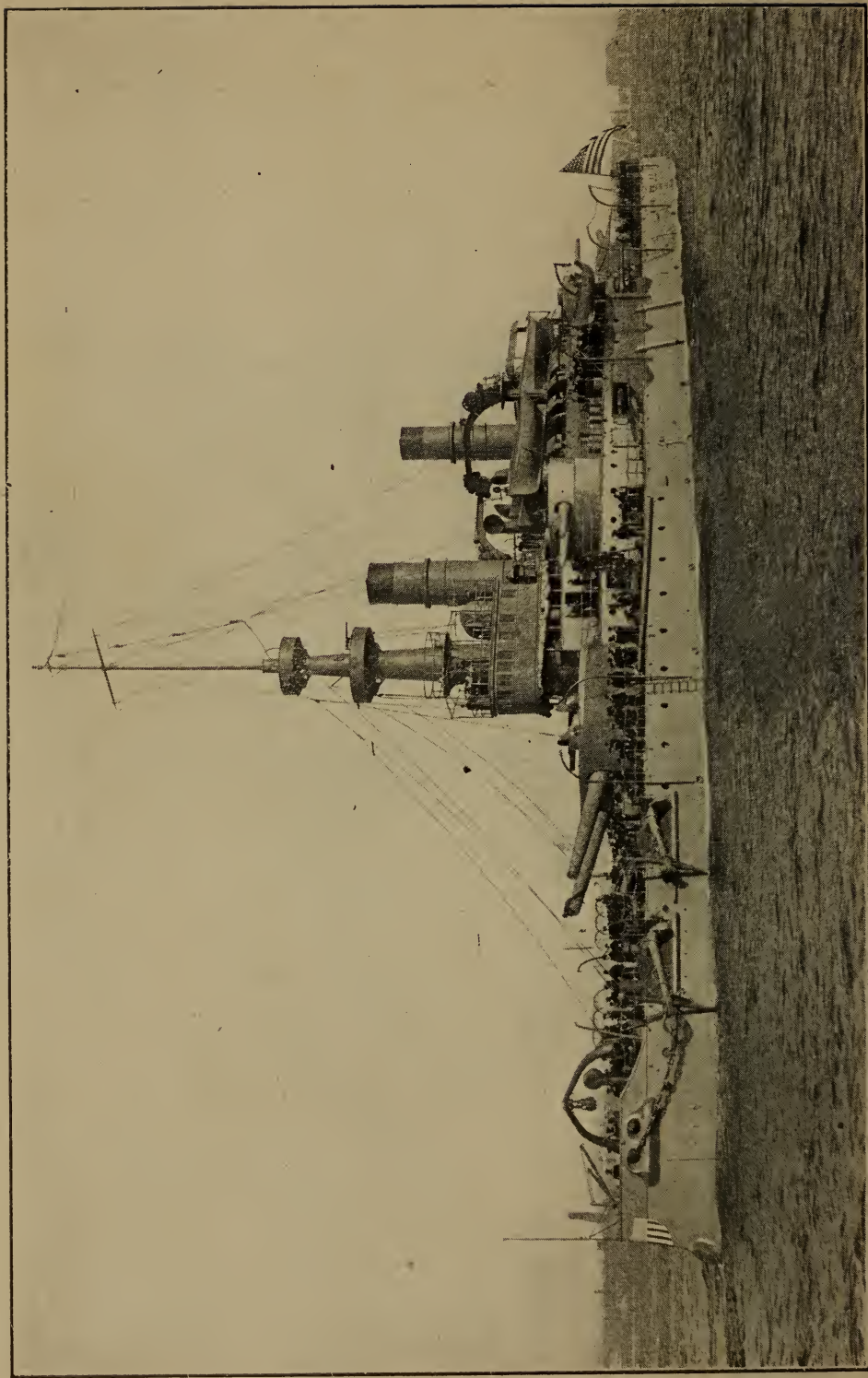
The crew is divided into divisions, such as powder, engineer's, and pay divisions; an officer being in charge of each division. The deck force (seaman branch) is also divided into divisions, such as first, second and third divisions. Each division is in charge of a Line officer who is assisted by other officers of lower rank. A marine captain and lieutenant have charge of the marines aboard ship.

On the larger type of ships an officer known as the signal officer is in charge of the signal branch. The wireless telegraph and telephone are now installed aboard most of our ships and are of great value in receiving and transmitting messages. Many secret codes are used when signaling. The captain has a secret code signal-book, which is bound in sheet lead; this book is bound in metal so that in time of war it can be thrown overboard to prevent any possibility of its falling into the hands of an enemy.

Warrant Officers. Several warrant officers act as assistants to the officer in charge of their respective departments. The majority of the warrant officers are promoted from the ranks. Boatswain, Gunner, Carpenter, Warrant Machinist, Sailmaker and Pharmacist represent the warrant officers of the ship. Some ships, however, do not carry a sailmaker or a



A NAVY-YARD SCENE. A typical scene at the Brooklyn navy-yard, where warships are overhauled.



U. S. S. OREGON, OUTWARD BOUND. This photo was taken in 1888, shortly after the battle of Sanjago.

pharmacist. Pay Clerks and Mates have about the same status as the warrant officers; instead of being warranted they are appointed. Mates are appointed from the enlisted men who have faithful service to their credit. Those who are too old, or are unable to pass the examination for warrant officer, find it quite easy to qualify for mate.

A warrant officer, after serving as such for a period of six years is examined for promotion. Should the examination be passed successfully he is commissioned in his respective corps, such as Chief Boatswain, Chief Gunner, or Chief Carpenter; these rank with, but after, an ensign.

HOW OFFICERS ARE MADE

Senators, Representatives, and Delegates in Congress appoint the midshipmen from their respective districts. The President also makes a number of appointments which are known as "Appointments at Large." Upon being appointed the applicant undergoes a careful examination. After the examination has been successfully passed, the applicant is then admitted to the Naval Academy.

Midshipmen go through a six-year course; four years are spent at the Naval Academy and two years on a sea-going ship. Upon completing the course a final examination takes place; those who pass successfully are commissioned ensign. Each

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class is appointed in order of merit, for instance, the Class of '08 consists of two hundred midshipmen; the one receiving the lowest percentage is placed at the bottom of the list. Each officer has a certain number; when an officer is promoted or retired, all those below him are advanced one number.

CHAPTER II

PREPARING FOR A VOYAGE—AT SEA—IN PORT—
DAILY ROUTINE—DRILLS OF THE WEEK—
DESCRIPTION OF DRILLS

PREPARING FOR A VOYAGE

THE flagship gives the order to get under way, allowance being made for the ship to get steam in the boilers and have everything in readiness for the voyage. Ships of the navy in commission are ready for duty at all times. Immediately after arriving in port from a long voyage the coaling gear is “broken out” and the ship is coaled.

The paymaster has always on hand a certain amount of provisions; shortly before sailing time a large supply is taken aboard. The fresh meats are stowed in the refrigerating rooms and the vegetables in the vegetable lockers. Engines, boilers, and in fact all parts of the ship are kept in perfect condition, so when the order is received to get under way at a specified time there will be no delay.

When the anchor gear is “broken out,” it is a

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good sign that the ship is about to start on her journey. Everything in the engine room is ready, a full head of steam is up, the engines have been warmed and tested, the steaming watch is on and everything is in readiness for the speed annunciators to give the signal to start the engines.

On the bridge, the steering gear, speed annunciators and other appliances used for the navigation of the ship have been tested, and the anchor gear is in readiness. Shortly before sailing time the captain and executive officer make their appearance on the bridge. The boats and gangways are hoisted in, and every one awaits the command "Up Anchor." All eyes are fixed on the flagship; suddenly as the signal "Up Anchor" flutters to the breeze, the executive officer then gives the order "Up Anchor." The anchor engine tugs at the mighty chains as they come quivering through the hawse pipes. Slowly, but surely, the huge anchor is hoisted. When it appears in view the cat-falls are hooked into the balancing-link of the anchor which is then hoisted aboard and placed on the bill-board, which is a slanting receptacle to which the anchor is secured by means of large clamps.

Many ships are equipped with a stockless anchor. The shank of this type is drawn into the hawse pipe. The instant the anchor is sighted and found to be clear, the flagship is signaled "All Ready."

Each ship strives to report first. It frequently occurs that the anchor is badly fouled by having the chain entangled around the anchor stock or flukes. When all the ships of the fleet report "All Ready," the flagship gives the signal to get under way, and the ships steam in column or in line according to the order, the flagship leading.

AT SEA

When the anchor is hoisted and secured, all gear about the decks is stowed, the boat covers are put on, and should the sea be rough, all necessary hatches, air and gun-ports are well secured. The ship is now ready to combat any storm that may arise. After a passenger steamer encounters a storm at sea the captain usually informs the passengers that it was the worst storm he ever encountered during his experience at sea. In the navy it is different, for all storms look alike to the man-o'-war's man. A warship is always ready for any emergency whether it be to battle with the elements or an enemy.

When at sea each division is divided into two watches, port and starboard. When the port watch is on duty it does all the work in its own part of the ship. Upon being relieved by the starboard watch the duties are performed by those assigned to this watch.

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The general routine at sea is somewhat different from that in port. On the bridge are the regular watch officers, quartermasters, signalmen and helmsmen, standing their watches. A seaman is stationed at the steering wheel, assisted if necessary by the quartermaster. On the lower decks is a member of the carpenter's gang on watch who sounds all bilges regularly and keeps a sharp lookout for leaky ports, etc.

At all times the life-boats are suspended from the davits ready for instant use. These boats are kept well provisioned and watered. At night a lighted lantern is kept in each boat and the life-boat crews are constantly on watch. Should the cry "Man Overboard" be heard, the boats are lowered instantly. Two patent life-buoys are suspended clear of the ship's sides, which are held in position by a trigger-like arrangement. When the trigger is pulled the buoy drops into the sea. Upon contact with the sea two jets of flame spurt up, as there are two automatic torches attached to the sides of the life-buoy. The person in the water swims for this buoy; the life-boats also make for the buoy upon getting clear of the ship. It rarely occurs that the cry "Man Overboard" is heard and in almost every instance the person is promptly rescued.

The entire crew excepting those on watch turn

in (retire) by eight o'clock in the evening. Throughout the day a lookout is stationed in the forward fighting top in order to keep a sharp lookout for passing vessels or land. Should a sailing vessel, steamer or land be sighted, the lookout would cry "Sail Ho," "Smoke Ho," or "Land Ho," as the case may be. The officer-of-the-deck would in turn inquire "Where Away?" In answer, the lookout reports the direction in which the object is sighted.

At noon when the weather is fair, the navigator observes the altitude of the sun with the sextant; for in this manner the exact position of the ship is determined. Should the weather be inclement for several days, the ship's position would then be judged by "dead reckoning." This is done by calculations from speed, courses steamed, and plottings on the chart. The patent log which is towed astern while the ship is under way registers the speed of the ship.

When the ship nears port both anchors are prepared for letting go, and the boats made ready for lowering, and many other preparations are made for bringing the ship to anchor.

IN PORT

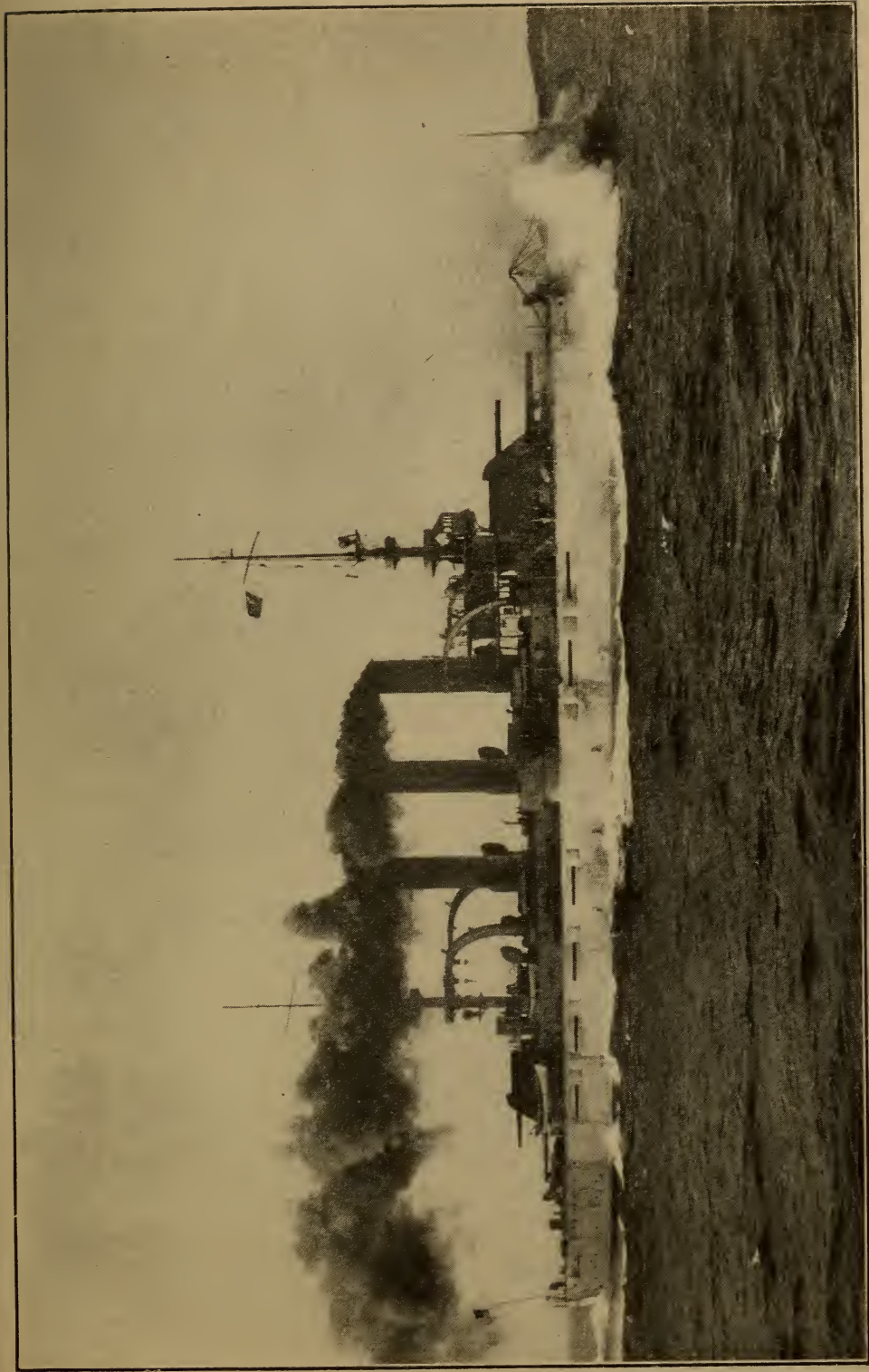
After being at sea for an extended period land is a very welcome sight. Upon entering a foreign port the ship steams in slowly to allow the quaran-

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tine authorities and other officials to board her and examine the ship's papers. An American warship can in almost every instance show a clean bill of health, because the crew is a healthy body of men. Jack's health is well cared for. All enlisted men carry a complete outfit of clothes which are adapted for both hot and cold climates.

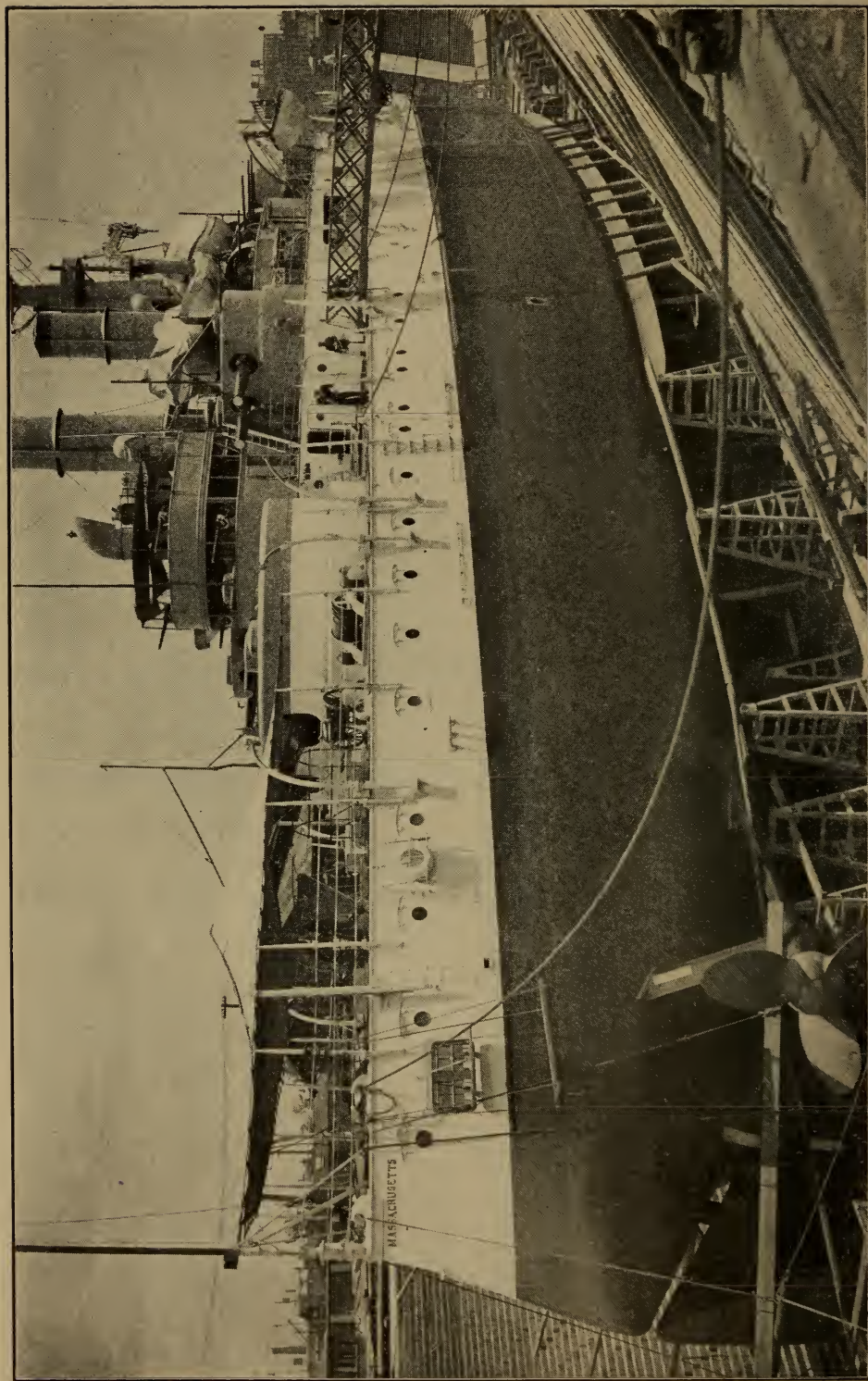
When the papers have been examined and found to be satisfactory, the ship proceeds into the harbor. On the port and starboard sides of the ship are two small extension platforms called chains. Seamen are detailed in the chains to heave the lead; at each heave of the lead the leadsmen drawl out the depth in a sea-going voice. When the ship has reached the anchorage spot the engines are reversed. As the ship begins to move astern the anchor which is released by a trigger arrangement, is ordered dropped. Upon its release a great splash is made, and the anchor chain creates a loud noise as it rattles through the hawse pipe. The chain is marked at intervals and the amount slacked out is regulated by the depth of the water, tides and position. As the anchor is released the lower booms are rigged out, the National Ensign hoisted at the stern, the Union Jack run up at the bow, all necessary boats lowered, and once more the port routine is resumed.

Upon the completion of a long voyage the ship



U. S. S. VIRGINIA ON HER TRIAL TRIP. This photo was taken while the ship was steaming over nineteen knots.

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HOW A BATTLESHIP IS DOCKED. The *Massachusetts* in dry-dock. This ship is about ready to be undocked.

is more or less disordered and her coal bunkers are quite depleted. The ship is soon coaled and all other stores laid in. After coaling, she is given a thorough cleaning. Side-cleaners go over the side and clean the sides of the ship. All boat gear and movable articles about the decks are "broken out" and thoroughly cleaned, and when all of these operations are completed the ship is once more neat and clean to the satisfaction of all hands.

Bright work (metal parts of the ship which are kept brightened, such as brass railings) is polished. Clean bags and hammocks are issued to the crew and the soiled ones are cleaned and turned in to the sailmaker's mate. The ship is touched up with paint where needed, and when the ship is "policed up" (an expression meaning absolute cleanliness and perfect order) the crew is given liberty.

The liberty party go ashore in watches or sections. Each member of the crew is assigned to a certain watch or liberty section which equalizes the work among the men left aboard. A party of bluejackets leaving the ship presents a picture of happiness; each is dressed in his "Sunday-go-to-meetings."

After taps, 9.00 P.M., the ship appears to be deserted, as the crew retires at this hour. There is no one about the ship except the quartermaster, sentries, anchor watch, and a few men on watch in the engineer's department.

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DAILY ROUTINE

The routine is systematically regulated as there is a time and place for everything. At 5.00 A.M., Reveille is sounded by the bugler. All hands, excepting a few who have stood a night watch, turn out, dress, lash and stow away their hammocks which must be accomplished within ten minutes, those who have stood a night watch sleep in until 7.00 A.M. From 5.10 A.M. to 5.30 A.M., hot coffee or cocoa is served to the crew from their respective messes. At 5.30 A.M., the boatswain's mates pipe Turn To and all hands go about their regular duties; decks, paint work, boat gear, etc., are thoroughly cleaned, this work is regulated by the morning order-book. At 6.45 A.M., the decks are washed and dried and all gear about the decks is stowed in its proper place. At 7.00 A.M., the morning work is about completed and the crew prepare for breakfast. At 7.20 A.M., Mess Gear is "piped," (signals given by the boatswain's mates with whistles called pipes. All calls not "piped" are sounded by the bugler) the messmen lower the mess tables, set up the benches and serve the breakfast. At 7.30 A.M., each member of the crew goes to his respective mess for breakfast; no one ever forgets the number of his mess—it is too important.

At 7.50 A. M., first call to "Colors," also Band Call is sounded, and the band assembles aft on the quarter-deck. At 8.00 A.M., the band plays "Colors" (the National Anthem), Old Glory is hoisted and all hands on the upper decks stand at attention facing the flag. When the band finishes playing the National Anthem all hands salute.

At 8.30 A.M., Sick Call is sounded and those wishing to visit the doctor go to the sick-bay and tell their troubles.

At 9.00 A.M., the crew finish their work and clear the decks for quarters. All gear about the decks is carefully stowed or made up and the decks given a thorough sweeping.

At 9.25 A.M., the Officers' Call to quarters is sounded and the crew go to their respective divisions neatly and cleanly dressed.

At 9.30 A.M., Quarters sound, the division officer inspects his division and reports to the executive officer. Shortly after quarters, retreat and drill calls are sounded. The drills vary according to the order of the day.

At 10.30 A.M., Retreat from drill. The crew is now generally at leisure until 1.30 P.M.

At 11.00 A.M., Band Call sounds and the Band assembles for practice.

At 11.50 A.M., Mess Gear is "piped" and at 12.00 M., dinner is served.

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At 1.00 P.M., Turn To is "piped" and the decks are again swept. At 1.30 P.M., Drill Call is sounded, and at 2.30 P.M., Retreat from drill. Little work is performed during the remainder of the day.

At 5.00 P.M., Evening Quarters; at 5.20 P.M., Mess Gear is "piped" and at 5.30 P.M., the supper is served.

Ten minutes before sundown, first call to "Colors" and band call sound. At sundown the band again plays the National Anthem and Old Glory is lowered.

At 7.30 P.M., the call Hammocks is sounded and the crew line up alongside the hammock nettings where the hammocks are stowed. When the boatswain's mates "pipe down" the hammocks are taken out of the nettings and the owners take them below and swing them on the hammock hooks, the number of the hook and that of the hammock corresponding.

At 8.00 P.M., the carpenter, gunner, sailmaker, master-at-arms and captain-of-the-hold report to the executive officer that everything in their respective departments is secure.

At 9.00 P.M., Taps is sounded and all unnecessary lights about the ship are extinguished. When with a fleet the senior ship fires a 9 o'clock gun.

DRILLS OF THE WEEK

The drills aboard ship vary considerably according to the weather and other circumstances. As a general rule the most important drills occur on certain days of the week and when these drills are taking place most all other work is temporarily suspended.

Monday morning, small-arm drill takes place. The crew is instructed in the manual of arms on the upper decks. During the afternoon boat drill is held and the ship's boats are lowered and the crew go out for drill.

Tuesday morning is devoted to battalion drill. In the afternoon signal drill is held, the members of the crew practising among themselves. All members of the seamen branch must be proficient in signaling.

Wednesday morning, fire drill is held. No one is permitted to be absent from this drill although from the minor drills several are excused; these are artificers and members of the engineer's department. Wednesday afternoon is mending and sewing time; should the day be fair Jack "breaks out" his bag of clothing and gives it an airing and overhauling.

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Thursday morning, general quarters is held. Every person has a station at this drill. In the afternoon sword exercise is held and the members of the crew are given single sticks or wooden swords with which to drill.

Friday morning, collision drill is held. Great promptness is displayed in this drill, all compartments, etc., are closed and the collision mat is thrown overboard and drawn over the hole supposed to have resulted from the collision. In the afternoon, arm and away drill is held, and the ship's boats leave the ship with an armed party for landing or boarding purposes.

Saturday is a general field day and no drills or routine of any kind excepting evening quarters are held. The ship is given a thorough cleaning to have her ready for the regular Sunday morning inspection. In the afternoon there is little work going on. The ship is touched up with paint where needed and the enclosed decks freshly shel-laced.

Sunday morning the ship is given an extra touching up, all bright work is highly polished and at quarters the crew muster in their respective divisions in their best clothes. The captain and the

executive officer inspect the crew, all storerooms and compartments. After inspection the crew is at leisure until Monday morning. There is always a certain number of men on watch at all times; electricians, quartermasters, marines and members of the engineer's force. These watches are so regulated that each has certain days off duty.

DESCRIPTION OF DRILLS

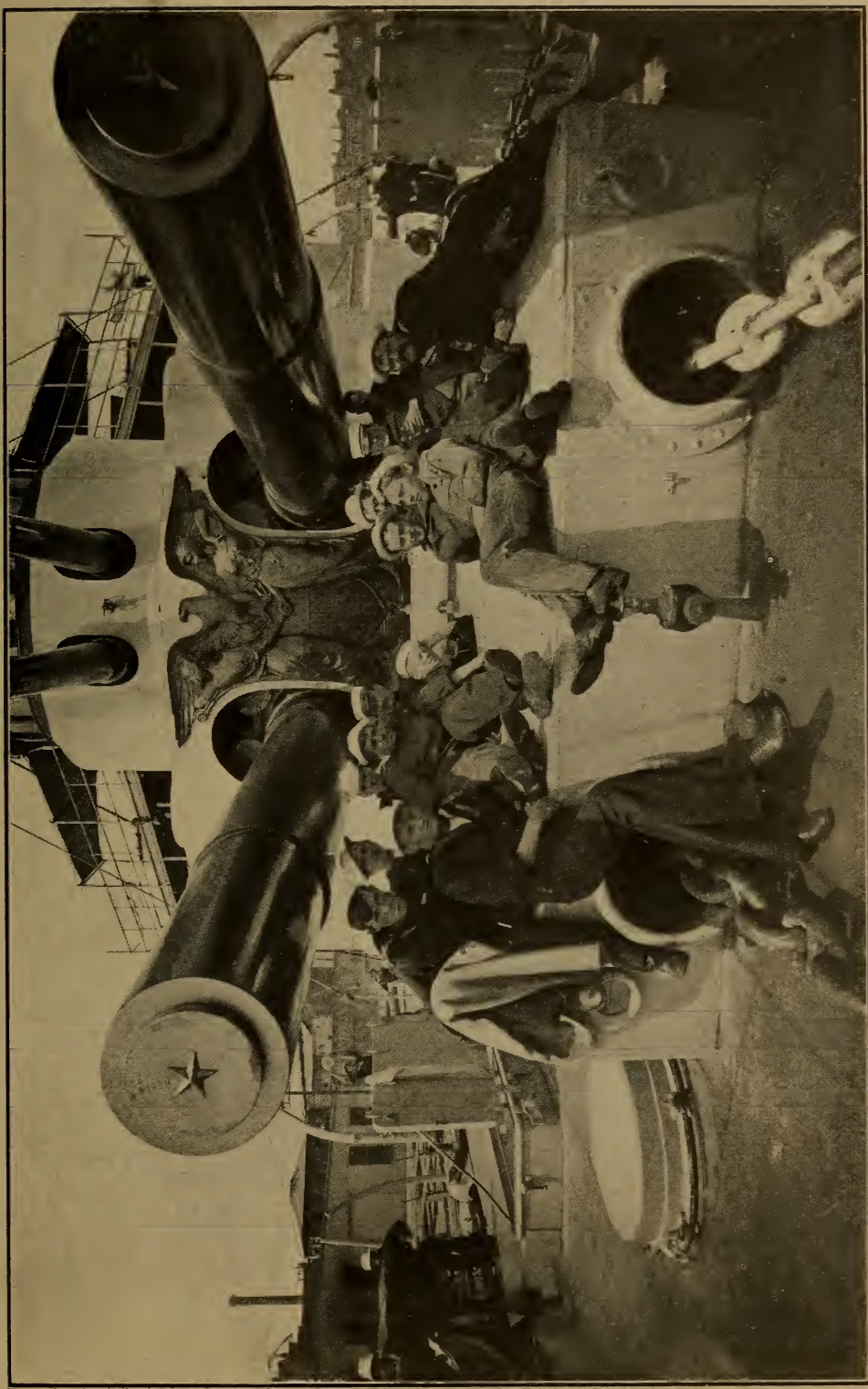
Fire Drill. Located throughout the ship are many fire plugs, reels of hose, nozzles and fire axes. The instant the fire alarm is sounded and the location of the fire known, all hands hurry to their allotted stations, each being detailed to perform certain duties. The smotherers go to the hammock nettings, each taking a hammock with which to smother the fire. Extra pressure is put on the fire mains, the fire hose is coupled and in a short time there are several streams of water available. In the engine room are huge fire pumps which supply all the necessary water. Salt water is used for fire extinguishing purposes. After Secure has sounded everything is restored and secured. Our large ships are built of metal throughout and what little woodwork there is in the interior, is made fireproof by treating it with certain chemicals. In case of fire all unused compartments are promptly closed, thus diminishing the danger.

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Abandoning Ship. Every person aboard ship is detailed to the ship's boats. There is a sufficient number of these boats carried to accommodate the ship's complement should it be necessary to abandon the ship. No one is excused from this drill excepting the few men on watch. Each one is detailed to assist and provide for his respective boat. Some get water, others provisions, cook-stoves, arms, ammunition, or mess gear. Casks of water are kept carefully stowed in the main hold where they are in readiness for an emergency. The paymaster throws open his storerooms where all necessary provisions can be procured.

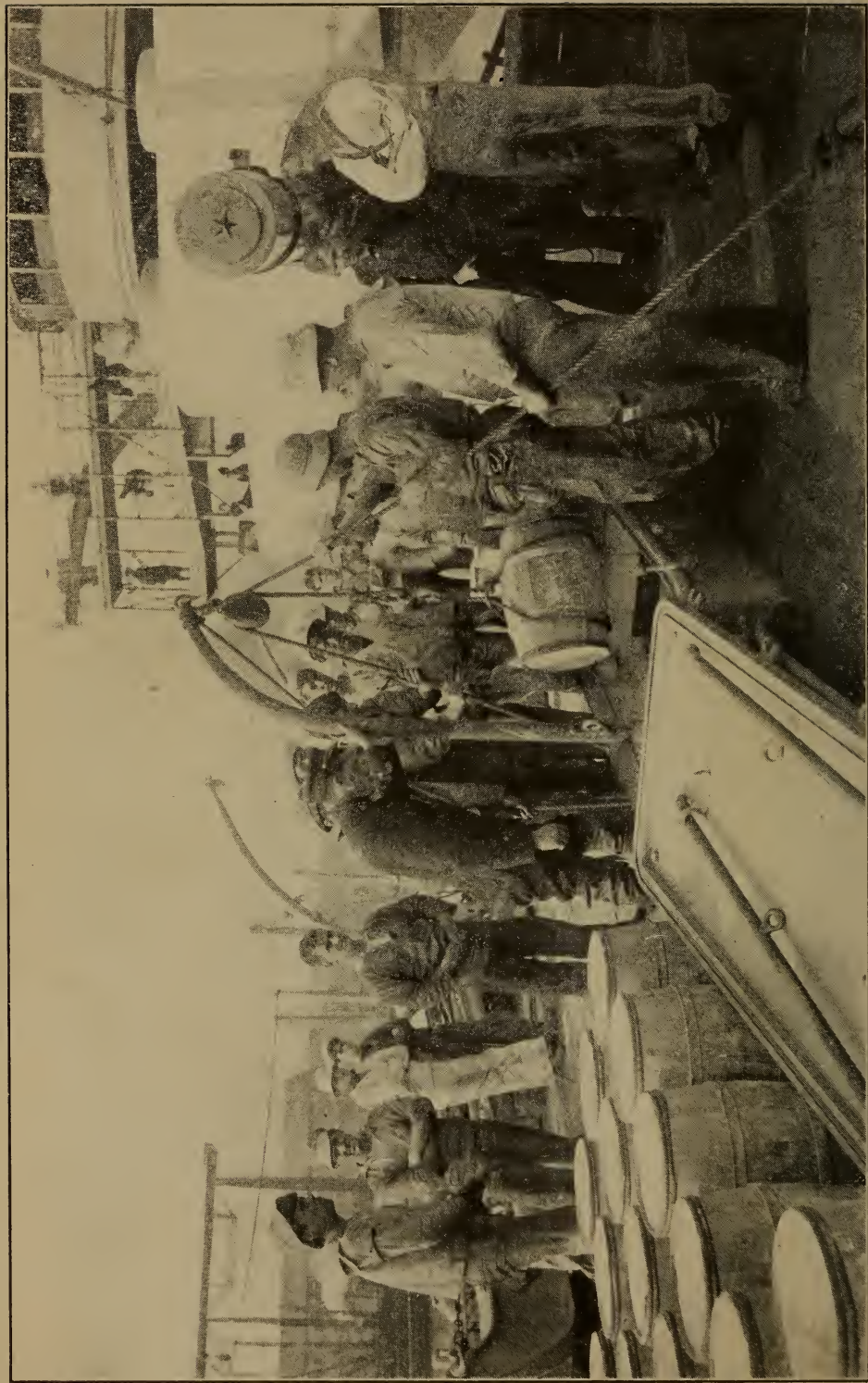
Each boat contains a boat-box in which are tools, fishing tackle, nails, strips of lead, etc. Often when the boats are lowered the crew get into them and row away from the ship leaving only a few persons aboard. Each boat has an officer in charge and when the boats return to the ship they are inspected to ascertain if they have been properly provided.

General Quarters. This drill is one of the most important held aboard ship and is usually held once a week when the same maneuvers are practised as though the ship were in action. All magazine doors and hatches under the armored deck are opened. There is a complete system of trolleys



TAKING LIFE EASY. Forward turret of the U. S. S. *Kearsarge*. Note the superposed turrets.

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TAKING STORES ABOARD. Eight hundred men are quite a number to feed. Navy men have good appetites.

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which lead from the magazines to the different ammunition hoists which convey ammunition to the guns as needed.

The instant General Quarters is sounded all men go to their allotted stations "double time"; everything seems to be in confusion but such is not the case, for in a few minutes there is a continuous stream of ammunition being forwarded to the guns. Battle-ports are battened down, unused compartments closed, on deck the guns are maneuvered as though in real action, torpedo attacks are repelled, and the imaginary enemy put out of commission.

During battery drill dummy cartridges are used in the smaller guns. Sometimes a wooden frame with which the six, seven and eight-inch gun's crew drill is set up. At one end a regulation breech-plug mechanism is attached. By making use of these appliances the guns proper are saved from much wear and tear.

Regular drilling develops perfect team-work. When the guns are in action either on the target range or in battle, perfect team-work is essential, for should one of the gun's crew delay in performing his specified duty the remainder of the crew would also be delayed.

After Secure has sounded everything is re-stowed, magazines are locked and the keys returned to the

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captain. The keys of the magazines can be secured only with the special permission of the captain.

Battalion Drill. Many persons are unaware that members of the navy are trained to be soldiers as well as sailors. All ships have a battalion which consists of every available man aboard, including the marines. Should any trouble arise ashore where Uncle Sam's interests are in jeopardy, the battalion is sent ashore fully armed, equipped, and prepared for any emergency that may arise. A battleship can land three hundred men or more and still have enough left aboard to operate the ship. When a fleet of warships is together a large force of men can be quickly landed when necessary.

At drill, the battalion, fully equipped in heavy marching order, musters on the quarter-deck. Each man carries a haversack, canteen, arms and ammunition, the haversack contains blankets, poncho, shifts of clothing, toilet gear and mess kit. The haversack and canteen are suspended from the shoulders. In the battalion are the Pioneers consisting of the carpenter's gang, each member carrying a set of tools.

The Color Guard, consisting of a detachment of armed men, march with the Color Bearers, protecting Old Glory. A couple of three-inch field pieces

and other small machine guns are included in the battalion.

It is a very imposing sight to witness a battalion of marines and bluejackets fully equipped, marching about the decks to martial music.

The medical department is also represented in the battalion. When convenient, the battalion is taken ashore and drilled.

Clear Ship for Action. This drill involves a considerable amount of labor, for the ship is stripped as though in real action. All stanchions, davits, awnings and chests are cleared away in order to give the guns a clear sweep. The chests, mess tables and benches are marked "O.B." and stowed away; all articles so marked would be thrown overboard in time of war thus reducing the danger of flying splinters. When the ship is stripped for action she looks somewhat like a bare tree, as there is no obstruction or gear of any kind about the decks.

When the drill is over the ship is rigged again, and after several hours of toil she once more displays a peaceful appearance. No battleship, however, could be properly termed peaceful when one realizes that within a few minutes she could be hurling many half-ton shells through the air. A thirteen-inch shell weighs eleven hundred pounds.

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When on the range for target practice the ship is also cleared for action.

Target Practice. The good shooting records made by the gunpointers of the navy show the highest standard of efficiency. Gunpointers are appointed from the crew; in these appointments no favoritism is shown, for anyone is eligible whether it be the ship's cook or the chief boatswain's mate. Men who can shoot straight are wanted and Uncle Sam surely has them. By rating anyone who can shoot well, the navy is benefited in many respects.

A large number of the crew are qualified to shoot the guns and should war occur, the gunpointers and other enlisted men of the navy who had remained in civil life after the expiration of their enlistment, would come to the front if needed. With the large fleet of converted cruisers and other craft which would be immediately commissioned, their services would be of great value owing to their previous training. It is not the gunpointer alone who is valuable, for there are several hundred other men stationed throughout the ship, each of whom has some specified duty to perform.

Official target practice is held annually. During this practice the range and speed are carefully recorded. Much preliminary target practice is also

held, which includes firing at long range, firing at night, etc.

The expense attached to target practice is enormous, as the wear and tear of the guns and the ship in general costs a great deal of money, this expense does not include, however, the actual cost of the ammunition used at target practice—yet the end justifies the means.

A few months before the regular target practice the guns are rigged up for sub-caliber practice. In sub-caliber practice a small rifle is strapped against the side of the large gun, and both guns are trained and sighted together. A swinging target is placed a few rods from the gun and when sighted properly the sub-caliber gun is fired. This particular form of target practice is known among the crew as “ping pong,” and those who make the highest score at “ping pong” are chosen to shoot the big guns at the regular target practice.

The target for the big guns is about fourteen by twenty feet and is set up on a raft-like arrangement which is securely moored. The range is usually two thousand yards or more and is carefully marked off by three flags directly in line with each other, the center flag being in front of the target.

The ship speeds by the range at twelve knots per hour, and as she comes abreast of the first flag the whistle is blown as a signal to commence firing.

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Everything is in readiness for the guns to be fired and when the whistle toots, there is a great noise and roar as the shell speeds through the air. The gun is now fired continuously, the gunpointers trying to make as many shots and hits as possible. When the ship comes abreast of the third flag the whistle toots again as a signal to cease firing. This particular form of shooting is called a "string." The ship always makes the same speed on the range so the time occupied in passing is always about the same. The center flag informs the officers and crew when half the distance has been passed.

The admiral appoints a board of officers to take charge of the official target practice which goes aboard each ship on the range and keeps an accurate account of all shots, time and speed, so that no partiality is shown to any ship.

President Roosevelt presented to the navy a prize known as the Gunnery Trophy, which goes to the ship making the best score at target practice each season. The name of the winning ship is inscribed on the trophy, a space being provided for the purpose. Great rivalry exists in the navy for the winning of this much coveted prize.

It is a fascinating sight to see a twelve- or thirteen-inch gun spit a great volume of fire and hurl the shell through the air. When the guns are fired the ship trembles as though she had run into a bank of dough and forced herself through, and the shell

seems to cut a great hole in the air as it speeds toward the target.

When one type of gun has completed firing on the range everything is re-stowed and the gun's crew comes up on deck to take in the excitement. It seems as though the sporting blood of each man aboard is aroused, for when a bull's-eye is made (it is a rare occurrence that the target is missed) a great and mighty cheer is given simultaneously. When in line with the target, shells from the six-inch and up can be plainly discerned with the naked eye as they speed on their course.

When a large caliber gun has been fired there is a tremendous roar; as the shell strikes, it throws the water up like a large water spout, while a couple of miles distant another splash can be seen; then one or two more, and that is the end.

Great precaution is exercised at target practice as the magazines are open and ammunition is lying about. Both officers and men take great pride in making a good score at target practice, for it is the result of many months of patience and toil. The general motto of the navy is "Only the shots that hit count" —and it surely requires a great many hits to win the Gunnery Trophy.

Collision Drill. When the alarm is given, compartments and water-tight doors are closed, hand-pumps rigged, etc. On our latest type of war-

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ships all the main water-tight doors are closed automatically, a whistle or bell giving the warning to keep clear. This gives the crew ample time to keep clear of the doors as they are being closed. A collision mat is kept in a handy place on deck where it can be easily procured. This mat is thrown overboard and by means of a system of ropes and chains it is hauled over the imaginary hole; were there a real puncture, the suction of the water entering would draw the mat over the hole and prevent any more from entering. The entire ship is a mass of bulkheads of all sizes and descriptions, thus should a puncture be made in a ship's bottom the danger would be quickly confined. In addition to these bulkheads, the ship has a complete double bottom which extends her entire length. A collision mat is about sixteen feet square and looks like a sheepskin, being made of short rope tufts sewed closely together on heavy canvas.

Other Drills. Many other drills take place on board ship, which include arm and away, signal, battery, sword drill and setting-up exercises. The deck force is drilled regularly with small arms, thus making them proficient. Often the entire crew is landed in sections and participate in small-arm practice, each member firing a certain number of rounds from a rifle and pistol.

Setting-up exercises are given the entire crew immediately after quarters and last about five minutes.

The most realistic drill of all is coaling ship, as this is classed as a drill and reality combined. Coaling ship is one of the most disagreeable tasks in the navy, because while the coaling is taking place the ship is more or less covered with coal dust. Our new ships have many modern coaling devices which reduce the labor, time and inconvenience of coaling. The large ships have a bunker capacity of from one thousand to two thousand five hundred tons. Many ships can take aboard over a hundred tons of coal an hour provided the coaling conditions are favorable. The different coal bunkers have large bunker plates, upon the removal of which the coal is dumped into the bunkers. When the coaling is completed, all coaling gear is restowed and the ship is then washed down and thoroughly scrubbed.

Most coaling is done from lighters or colliers which come alongside the ship. In many of the foreign ports the navy has its own supply of coal, which is of the best quality. Should a ship be ordered home from a distant port, the bunkers would be filled to their utmost capacity and a deck load of coal carried, which is placed in bags and is the first used.

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Usually when a warship is ordered to sea she takes the least traveled route, and should a disabled vessel be sighted, aid would be promptly rendered. In time of war, to supply coal to the various warships is a serious problem. Many patent devices have been tried for coaling from a collier at sea, but the weather and other conditions must be favorable to transfer any great amount. Should the day arrive when warships use oil for fuel the labors of the personnel will be greatly reduced.

CHAPTER III

THE CREW AND THEIR DUTIES—RATING AND
PAY OF THE ENLISTED MEN—ENLISTMENTS—
OPPORTUNITIES—SAILOR'S DUDS—AMUSE-
MENTS AND PASTIMES—MAN-O'-WAR
LINGO

THE CREW AND THEIR DUTIES

THE following descriptions will give a good idea of the duties required of each member of the crew. Our armored cruisers and battleships carry a crew of from five hundred to nine hundred men, according to the size and type of the vessel. The amount of work performed daily to keep the ship in trim is enormous.

The naval regulations are such that each member of the crew is cognizant of the duties expected of him. The term crew refers to the enlisted men, while the ship's complement includes both enlisted men and officers. The list of rates are sectioned off to enable the reader to ascertain to which department of the ship the men are assigned.

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ENGINEER'S DEPARTMENT

Machinist's Mates stand regular watches at sea and work about the machinery of the ship when in port. A machinist with no previous sea service upon first enlisting is rated second-class and later when more proficient is rated first-class, and then chief. A chief machinist's mate often stands a throttle watch and has other important duties to perform. The term chief is applied to all chief petty officers who hold the highest rank of the enlisted men.

Watertenders are in charge of the fire rooms. At sea two or more are on watch and they see that the proper amount of steam is kept up, that the boilers are supplied with water, and that other details are attended to. Watertenders are promoted from oilers and firemen. There are two rates, chief watertender, and watertender.

Oilers stand a regular watch in the engine room both at sea and in port. At sea they oil the machinery regularly and are careful that no bearings run hot. Most of the machinery is oiled automatically by self-feeders which are operated by a system of small tubes leading from the oil-reservoirs to the different bearings. In port, oilers stand a regular auxiliary watch attending to the steam

pumps and assisting in general. There is but one rate of oiler and he is promoted from fireman.

Boilermakers perform all necessary work on the boilers. When the ship has arrived in port from a voyage considerable work is done; old grate-bars, bridge walls, gaskets, etc., are renewed. Many of our ships with high-pressure boilers have a working pressure of two hundred and fifty pounds of steam.

Blacksmiths perform all the smithing work of the engineer's department. Many ships are equipped with a modern blacksmith shop. The majority of the repairs aboard ship are made by the officers and the crew. Should all the repair work be done by private shipyards, the Naval Appropriation would no doubt have to be doubled.

Coppersmiths, blacksmiths, plumbers and boiler-makers are enlisted first-class direct. There is only one rate of each. All suction and supply pipes from the pumps, condensers and other machinery are made of copper, for many of these pipes have salt water circulating through them, and were they not made of copper, they would soon deteriorate.

Firemen keep up steam in the boilers. At sea the engineer's department is divided into steaming

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watches, as a rule they are divided into four watches, thus giving the men more time off duty. There are two rates of firemen; first-class and second-class. Firemen with experience are enlisted direct, but the majority are rated from coalpassers.

Coalpassers trolley the coal from the bunkers to the firemen, each supplying a certain number of fires with coal. All coal bunkers are equipped with a complete trolley system, the coal being shoveled into iron buckets which are trolleyed to the firemen. At the end of each watch fires are cleaned, ashes hoisted and dumped overboard, and everything in the fire room is turned over to the relief watch in good order.

CARPENTER'S GANG

Carpenter's Mates keep in repair all woodwork of the ship. There are four rates; chief, first-class, second-class and third-class. Each ship is allowed a certain number of men of each rate, and with so many of the crew being transferred, paid off, etc., there are many vacancies which are filled by promoting members of the crew when possible to do so.

Shipfitters have a complete knowledge of the ship and their duty is to perform all riveting and other work outside of the engineer's department. Upon

first enlisting, they are rated second-class and later, first-class.

Shipwrights perform duties similar to those of the carpenter's mates, and when vacancies occur they are promoted to the higher rates. Many of the rates are divided into several grades which create many opportunities for advancement.

Painters are included in the artificer's branch. In the paint locker all necessary paints are stored and mixed ready for use. Uncle Sam takes great pride in having his ships kept scrupulously clean, both within and without. The painters mix and serve all necessary paints besides performing all skilled labor, as retouching the figurehead, lettering, etc. There are three rates of painters; first-class, second-class and third-class.

DECK FORCE

Masters-at-Arms are to the ship what a police force is to a city. There are four rates; chief, first-class, second-class and third-class. Masters-at-arms are responsible for prisoners, all parts of the enclosed decks where the crew eat, and mast call. The names of all who commit themselves are entered in the report book, and when the captain is prepared to hold court, mast call is sounded and

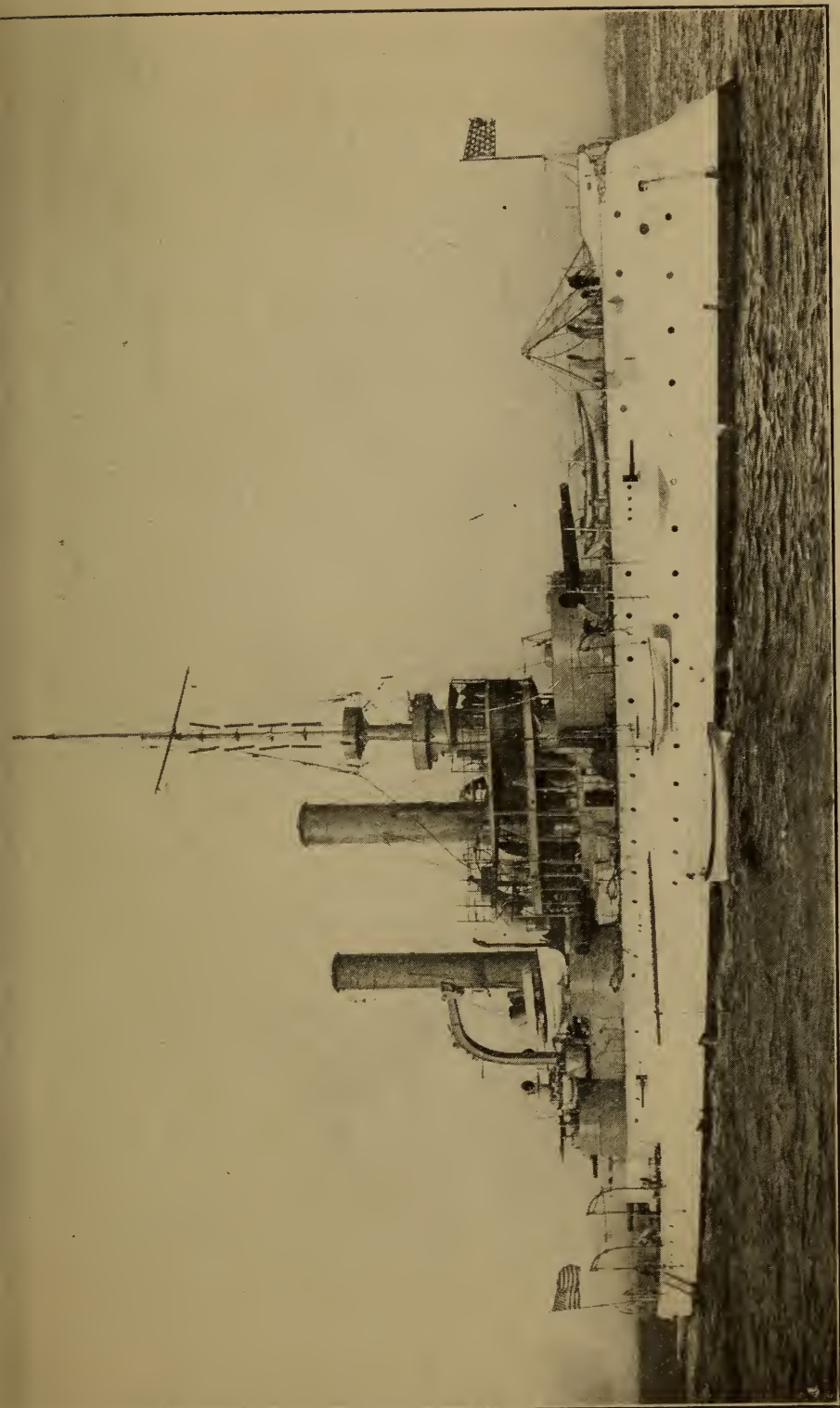
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the master-at-arms lines up all the offenders on the quarter-deck where the captain passes judgment on each case. Most offenses committed are of a minor nature.

Boatswain's Mates do duty about the upper decks of the ship, one or more being assigned to each division. They carry silver whistles or "pipes" which are blown according to a certain code of signals. The deck force, which is divided into divisions, is assigned to certain sections of the ship. In this manner each division keeps in order a certain part of the ship. There are three rates; chief, first-class and second-class.

Coxswains are detailed in charge of the ship's boats, each boat rating one, and they, with the rest of the boat crews, keep their respective boats in order. Coxswains are promoted from seamen; their next advancement is to boatswain's mate.

Quartermasters stand a regular watch on the bridge at sea and in port. At sea they keep a keen lookout, sending and receiving all signals, and in port they keep a sharp lookout and report all passing vessels, signals, etc. The signal flags are placed in lockers on the bridge where they are ready for instant use. There are four rates



U. S. S. Iowa. Pages 132 to 139 respectively contain valuable data of our warships.

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of quartermaster; chief, first-class, second-class and third-class.

Seamen, Ordinary Seamen and Apprentice Seamen are three distinct rates. Upon first enlisting in the seamen branch a recruit without any previous training is rated apprentice seaman, after passing through several courses of training and found to be proficient, he is gradually promoted.

Sailmaker's Mates have charge of all the canvas work of the ship. Twice a month clean clothing bags and hammocks are issued to the crew and the soiled ones are scrubbed and turned in to the sailmaker's mate. There is but one rate of sailmaker's mate.

ORDNANCE DEPARTMENT

Gunner's Mates are in charge of the different batteries, magazines and other ordnance appliances to which they are assigned. Members of the crew are detailed to the different guns as the regular gun's crews. The guns and their accessories are kept in perfect order. There are four rates of gunner's mates; chief, first-class, second-class and third-class.

Turret Captains are detailed for duty in the turrets only, and they have a thorough technical

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knowledge of the guns, and are also in charge of the turret. A turret captain is next in command after the turret officer and should anything happen to the turret officer, the turret captain would then take charge. They also act as drill instructors and drill the gun's crew when necessary. There are two rates of turret captains; chief and first-class.

PAY DEPARTMENT

Commissary Stewards cater to the crew's mess and when convenient, they go ashore and purchase all the necessary provisions and supplies. Every enlisted man is allowed a certain amount of fresh bread, meat, etc., which is issued to the cooks in bulk daily.

Ship's Cooks do cooking for the crew only. The ship is equipped with a large modern galley which contains many ranges, besides several large coppers. All cooking in the coppers is done by steam. A regular bill of fare is made out in advance by the commissary steward — each mess fares alike, for no one is allowed to contribute any mess money. Should the meal be a poor one or improperly cooked, members of the crew would take a sample of it to the officer-of-the-deck where the complaint is investigated. There are four rates of ship's

cooks; first-class, second-class, third-class and fourth-class.

Bakers are also carried, and their services are very much in demand. In order to realize this, one need but consider the amount of fresh bread consumed daily by six hundred or more men. The baker has a modern bake oven and bake shop for making bread and pastries. When in port the fresh bread is generally purchased ashore. There are two rates of bakers; first-class and second-class.

MEDICAL DEPARTMENT

Hospital Stewards have charge of the sick-bay or ship's hospital and they carry out the doctor's orders pertaining to the treatment of patients and other routine. Hospital stewards are well versed in pharmacy. There is but one rate of hospital steward.

Hospital Apprentices serve out medicine, take temperatures and assist in general. There are two rates of hospital apprentices; first-class and hospital apprentice.

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CLERICAL FORCE

Yeomen are assigned to different departments of the ship. Pay, equipment, engineer's department, admiral, captain, executive officer, and navigator, each have one or more yeomen to perform the necessary clerical work. There are many log books, accounts and records kept aboard ship. Members of the crew are often rated yeomen when found qualified. There are four rates of yeomen; chief, first-class, second-class and third-class.

Printers are carried principally aboard flagships. They have a complete printing press with which band programs and fleet orders are printed. Many of the large ships print a weekly or monthly paper which is devoted to the interests of the crew. There is but one rate of printer.

OTHER RATES

Electricians stand regular watches as the dynamos are in operation day and night. On the latest type of warships, blowers, cranes, and gun turrets are operated by electrical power. The dynamo room is located in a separate compartment below the armored deck. The ship contains a mass of electrical appliances which are kept in perfect order.

There are four rates of electricians; chief, first-class, second-class and third-class.

Buglers stand a regular watch and sound all calls which are ordered by the officer-of-the-deck. Each drill call is quickly recognized by the notes sounded on the bugle. At sea the bugler's duties are quite light there being but few calls. There is but one rate of bugler.

Bandmaster is in charge of the ship's band. All ships of the first rate, battleships, armored cruisers, and flagships, carry a band. The bandmaster leads the band and ranks as a chief petty officer.

Bandsmen are quite an acquisition to the ship. When at sea it is quite a treat to go on deck and listen to the concert. All members of the band are also proficient with stringed instruments. There are two rates of bandsmen; first-class and second-class.

Marines, consisting of about sixty-five men, are carried together with their regular quota of sergeants and corporals. Marines stand sentry watch about the ship and are also assigned to several of the ship's guns as the regular gun crews. The Marine Corps is a special branch of the navy, and

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its maintenance is provided for in the regular naval appropriation.

Cooks, Stewards and Mess Attendants are three distinct rates. The admiral, captain, wardroom officers, junior officers and warrant officers' mess have their regular allowance of cooks, stewards and mess attendants. The officers' standard of living is regulated by the mess money they subscribe.

EXTRA RATES

There are many extra rates in the navy which entitle the holders thereof to extra pay.

Gunpointers receive ten, eight, six, four and two dollars per month extra which is regulated according to the classification of the gunpointer. No doubt our wonderful shooting records have been brought about by this rate.

Captain-of-the-Hold is appointed from seaman and he receives five dollars per month extra. He has charge of the ship's main hold where anchor gear, hawsers and all other nautical gear are stowed. Should the boatswain send for a certain article the captain-of-the-hold would fill the order. The captain-of-the-hold also keeps account of the fresh water used outside of the engineer's department.

Lamplighters are appointed from ordinary seamen. A supply of spare lanterns and side-lights is carried which is to provide for an emergency should the electric lights fail. Lamplighters also attend to the portable lights about the decks. Their extra pay is five dollars per month.

Signal Men first-class receive three dollars per month extra, second-class signal men receive two dollars, and third-class signal men, one dollar per month extra. They are expert in receiving and sending signals quickly and accurately. They work on the bridge with the quartermasters.

Ship's Tailor and *Tailor's Helper* are also appointed from the crew. All clothing issued by the paymaster is altered free of charge. In this manner Jack's clothes are sure to fit. There are also other men aboard ship who do tailoring for the crew. The ship's tailor receives twenty dollars extra per month and the helper ten dollars.

Jack-of-the-Dusts are detailed from ordinary seamen. They are attached to the pay department and assist in issuing clothing and rations. Their extra pay is five dollars per month.

Submarine Boat Men receive five dollars per

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month extra, also one dollar additional for every day or part thereof that their boat may be submerged.

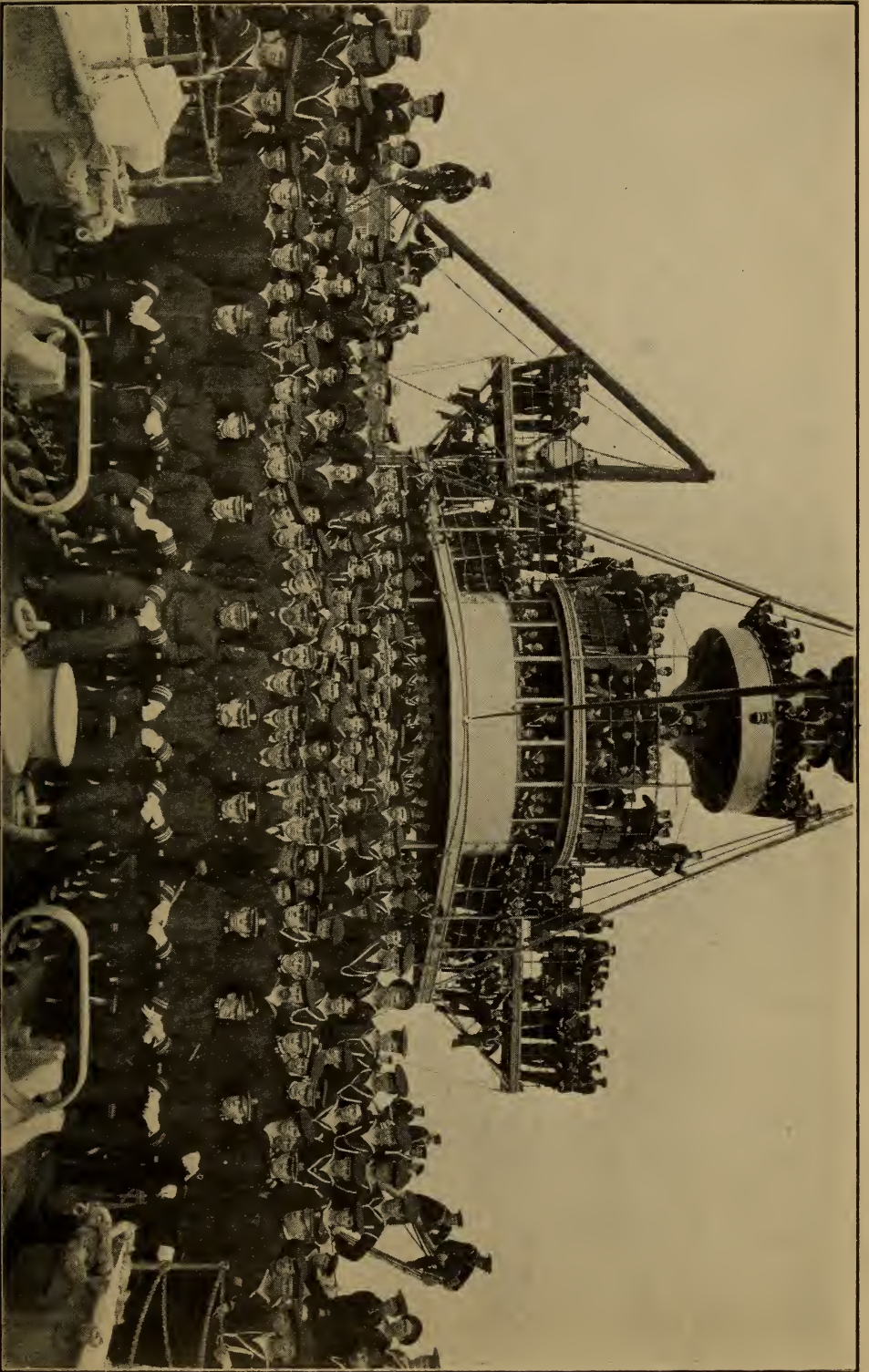
Mess Men are detailed from ordinary seamen to wait upon the tables, bring the food from the galley, and lay out the meals for the crew. About twenty men are assigned to each mess. Mess men receive five dollars per month extra.

Drill Instructors are chief petty officers who drill and train the recruits of the seamen branch at the Naval Training Stations maintained ashore. Their extra pay is ten dollars per month.

RATING AND PAY OF THE ENLISTED MEN

The following tables give the rating and pay of the enlisted men. All these pay tables signify initial pay; the longer one remains in the service the greater his pay.

Previous to July 1, 1903, all chief petty officers received from \$50.00 to \$70.00 per month which was regulated according to the rating of the chief petty officer. When an enlisted man is promoted he is given an acting appointment, and when the acting appointment has been in force one year, the owner is then recommended for a permanent ap-



Ship's Company, U. S. S. CHARLESTON. When these group views are taken, each member of the crew sends one home.



GETTING THE LIBERTY BOATS READY. Liberty is given regularly. The ship's boats are used to take the men ashore.

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Rating and Pay of the Enlisted Men 65

pointment. When a chief petty officer receives a permanent appointment he is then entitled to \$70.00 per month. With all other rates the pay is the same regardless of the permanent appointment. Under certain conditions an enlisted man can be promoted to a higher rate without a permanent appointment. This is done upon the approval of the Commanding Officer and the Navy Department.

CHIEF PETTY OFFICERS

Rate	Acting Appointment Pay per month	Permanent Appointment Pay per month
Chief Master-at-Arms	\$65.00	\$70.00
Chief Carpenter's Mate	50.00	70.00
Chief Boatswain's Mate	50.00	70.00
Chief Yeoman	60.00	70.00
Chief Gunner's Mate	50.00	70.00
Commissary Steward	60.00	70.00
Chief Quartermaster	50.00	70.00
Chief Commissary Steward	70.00	70.00
Bandmaster	52.00	70.00
Chief Machinist's Mate	70.00	70.00
* Hospital Steward	60.00	60.00
Chief Watertender	50.00	70.00
Chief Electrician	60.00	70.00
Chief Turret Captain	60.00	70.00

* Hospital Steward's pay is regulated by Congress.

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FIRST-CLASS PETTY OFFICERS

	Rate	Pay per month
Machinist's Mate, first-class.....		\$55.00
Yeoman, first-class.....		40.00
Electrician, first-class.....		50.00
Master-at-Arms, first-class.....		40.00
Boatswain's Mate, first-class.....		40.00
Gunner's Mate, first-class.....		40.00
Quartermaster, first-class.....		40.00
Carpenter's Mate, first-class.....		40.00
Coppersmith.....		55.00
Shipfitter, first-class.....		55.00
Painter, first-class.....		40.00
Turret Captain, first-class.....		50.00
Watertender.....		40.00
Boilermaker.....		65.00
Blacksmith.....		50.00
Plumber and Fitter.....		45.00
Sailmaker's Mate.....		40.00
First Musician.....		36.00

SECOND-CLASS PETTY OFFICERS

	Rate	Pay per month
Master-at-Arms, second-class.....		\$35.00
Machinist's Mate, second-class.....		40.00
Electrician, second-class.....		40.00
Boatswain's Mate, second-class.....		35.00
Gunner's Mate, second-class.....		35.00
Yeoman, second-class.....		35.00
Carpenter's Mate, second-class.....		35.00
Quartermaster, second-class.....		35.00

Rating and Pay of the Enlisted Men 67

Shipfitter, second-class.....	\$40.00
Painter, second-class.....	35.00
Oiler.....	37.00
Printer.....	35.00

THIRD-CLASS PETTY OFFICERS

	Rate	Pay per month
Carpenter's Mate, third-class.....		\$30.00
Master-at-Arms, third-class.....		30.00
Electrician, third-class.....		30.00
Gunner's Mate, third-class.....		30.00
Painter, third-class.....		30.00
Yeoman, third-class.....		30.00
Quartermaster, third-class.....		30.00
Coxswain.....		30.00
Hospital Apprentice, first-class.....		30.00

OTHER RATES

	Rate	Pay per month
Seaman.....		\$24.00
Ordinary Seaman.....		19.00
Apprentice Seaman.....		16.00
Bugler.....		30.00
Fireman, first-class.....		35.00
Fireman, second-class.....		30.00
Coalpasser.....		22.00
Shipwright.....		25.00
Ship's Cook, first-class.....		55.00
Ship's Cook, second-class.....		40.00

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Ship's Cook, third-class.....	\$30.00
Ship's Cook, fourth-class.....	25.00
Musician, first-class.....	32.00
Musician, second-class.....	30.00
Baker, first-class.....	45.00
Baker, second-class.....	35.00
Hospital Apprentice.....	20.00
Admiral's Cook.....	50.00
Admiral's Steward.....	60.00
Cabin Steward.....	50.00
Cabin Cook.....	45.00
Wardroom Steward.....	50.00
Wardroom Cook.....	45.00
Warrant Officers' Steward.....	35.00
Warrant Officers' Cook.....	30.00
Mess Attendant, first-class.....	30.00
Mess Attendant, second-class.....	25.00
Mess Attendant, third-class.....	20.00

EXTRA RATES *

Rate	Pay per month
Captain-of-the-Hold.....	\$5.00
Jack-of-the-Dust.....	5.00
Lamplighter.....	5.00

* There are many extra rates aboard ship which are given to the men holding a lower rate. This extra pay demonstrates how liberal Uncle Sam is to the enlisted men, for the men would have to perform these duties without extra pay should the Navy Department see fit.

Rating and Pay of the Enlisted Men 69

Rate	Pay per month
Coxswain of Steam Launch.....	\$ 5.00
Messmen.....	5.00
Signal-man, first-class.....	3.00
Signal-man, second-class.....	2.00
Signal-man, third-class.....	1.00
Ship's Tailor.....	20.00
Men on submarine boat duty.....	5.00
Tailor's Helper.....	10.00
Heavy Gunpointers, first-class.....	10.00
Heavy Gunpointers, second-class.....	6.00
Intermediate Gunpointers, first-class.....	8.00
Intermediate Gunpointers, second-class.....	4.00
Secondary Gunpointers, first-class.....	4.00
Secondary Gunpointers, second-class.....	2.00
Drill Instructors (at Naval Training Stations).....	10.00

THE MARINE CORPS *

Rate	Pay per month
Sergeant Major.....	\$34.00 to \$42.00
Quartermaster Sergeant.....	34.00 to 42.00
Drum Major.....	25.00 to 33.00
Gunnery Sergeant.....	35.00 to 43.00
First Sergeant.....	25.00 to 33.00
Sergeant.....	18.00 to 26.00
Corporal.....	15.00 to 23.00
Private.....	13.00 to 21.00

* Marines receive clothing allowance and their pay increases according to length of service. A regular pay schedule is arranged for this purpose.

ENLISTMENTS

Upon enlisting, the Shipping Articles (an agreement between the Government and the recruit) are read, and the recruit agrees on oath to obey all rules and regulations of the naval service. The enlistment record is under the personal supervision of the executive officer. All offenses, recommendations and other details are entered upon this record.

The term of enlistment is four years. Permanent recruiting stations are established in many of the large cities, and traveling recruiting parties are also sent out by the Navy Department to visit the smaller cities and towns. When a number of men have been enlisted they are sent to the different receiving ships and training stations.

A receiving ship is known as a *guardo* which is nothing more than a sailor's boarding house. A *guardo* presents a busy scene as all unassigned bluejackets are quartered aboard awaiting assignment. Men whose enlistment is about to expire are generally sent to a *guardo* to be paid off.

Training stations are located ashore where newly enlisted men, as apprentice seamen, are sent. After successfully passing several courses of training, recruits are promoted, and sent to the different

ENLISTMENT RECORD.

SCALE OF MARKS—No. Bad; 1, indifferent; 2, Fair; 3, Good; 4, Very Good; 5, Excellent.

Name, Thomas Berger, Rate, S.P. 3 class
 Enlisted Oct. 9 1902 at San Francisco Cal. for 4 years;
 Previous Naval Service 2 years; Served Apprenticeship, _____;
 Gun/Captain Certificate, _____; Certificate of Graduation P. O. School, _____
 Seaman Gunner, _____; Trade Plumber, Citizenship, U.S.
 Ratings held during enlistment, S.P. 3 class
 Proficiency in Rating 4.12 Seamanship 4.12 Ordnance 3.75
 Marksmanship, Great Guns, 12 Marksmanship, Small Arms, 30
 Signaling, _____; Sobriety, 5 Obedience, 4.82
 Average Standing for term of enlistment, 4.49
Holiday, J. B. Jones U.S.N.,
and Enlisting Officer.

DESCRIPTIVE LIST.

(To be made after careful examination at date of discharge.)

Where Born Oakland, Cal., Date Dec. 10, 1876
 Age, 29 years 9 months; Height, 5 feet 5 inches; Weight, 135 lbs.;
 Eyes, blue-gray; Hair, br. brown; Complexion, fair
 Personal characteristics, marks, etc. scar left leg American
scar left thigh & leg large injury

Percentage of time on sick list during enlistment, _____

Is _____ physically qualified for reenlistment.

J. B. Jones U.S.N.
(Signature, medical officer)

I hereby certify that the above-named Thomas Berger
 has been paid two hundred fifty dollars 50c cent
 (\$ 250 or _____), in full to date. Pay per month at date of discharge, \$ 5.82
Oct 8th 1906 W. H. Smith U.S.N.
(Signature Paymaster)


PHOTOGRAPHIC REDUCTION FROM ORIGINAL.

Paul
to R

Paul *message New York NY*
to R *Francis. Col*

Honorable Discharge from the United States Navy.

W. L. Smith
 PAYMASTER U.S. NAVY



This is to Certify that *Mr. Thomas Beyer* *Ship's Steward 1st Class*
 as a "TESTIMONIAL OF FIDELITY AND OBEDIENCE," is HONORABLY DISCHARGED from the U. S. *Navy*
 and from the Naval Service of the United States, this *1st* day of *Oct*, 190*6* at *New York*
 Now, according to the provisions of Section 1573 (as amended by Act of Congress approved March 3, 1899)
 of the Revised Statutes, if within four months from this date the said *Thomas Beyer* shall
 present this, his Honorable Discharge, at any United States Naval Headquarters, and is found physically qualified,
 and shall continue for four years; then he shall be entitled to pay during the said four months equal to that to which he
 would have been entitled had he been employed in actual service.

Upon receiptment, and the surrender of this Discharge, should he so desire, he will receive a CONTINUOUS SERVICE
 CERTIFICATE, showing his service and honorable discharge, and shall receive an addition of one dollar and thirty-six cents
 per month to the pay of the rating in which he enters or to which he may be promoted.

W. L. Smith *Captain U.S.N.*
 Being best qualified to fill, *S. P. Classi* *Commanding U. S. S. Hancock*

11-11-1906-6, 202

PHOTOGRAPHIC REDUCTION FROM ORIGINAL.

ships in commission to fill vacancies. The majority of the recruits take to the sea like a duck to water as there is seldom a case of chronic seasickness. When one stows away a couple of pounds of "salt horse" (salted meat) all tendency toward seasickness disappears.

A complete outfit of clothing is furnished the recruit which is taken to the master-at-arms where the owner's name is stamped on each article according to the naval regulations. Upon donning his new uniform the recruit feels quite strange but this soon disappears. A few days after enlisting it is probable the recruit will be writing home telling his folks all about the service.

Upon receiving an honorable discharge from the navy, four cents per mile is granted from point of discharge to original point of enlistment. This mileage money is paid in lieu of transportation and subsistence which the Government agreed to furnish. The discharge is made out according to the owner's enlistment record, there being a regular scale of marks for this purpose. In selecting members of the crew for promotion, those who have a good enlistment record are preferred. There are three grades of discharge; honorable, ordinary and dishonorable.

On the opposite page is a facsimile of the discharge received by the author upon the expiration

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of his second enlistment. By referring to this discharge it will be noted that \$1.36 was granted as increase pay when reenlisting within a period of four months after discharge. Since that date, a new order has been issued granting \$5.00 increase of pay per month throughout the second enlistment and \$3.00 increase of pay per month during each subsequent enlistment. This increase of pay will enable a recruit who enlists with no trade or profession to eventually draw from \$75.00 to \$100.00 per month. This, of course, after he has become a chief petty officer, which can easily be accomplished on the second enlistment.

OPPORTUNITIES

It is quite evident that there are many openings in the navy for an enlisted man. The pay tables demonstrate the fact that there are over one hundred different rates (positions) aboard ship. To compare the pay of these various rates with similar vocations in civil life, would reveal the fact that the navy men receive in the end, far better pay. Take for instance, a coalpasser or an apprentice seaman, these are the lowest paid men in the service, the navy enlists these recruits with the intention of training them to qualify for higher and better paid positions.

Quartermasters, gunner's mates, boatswain's

mates and many others are gradually promoted in turn from apprentice seamen. The members of the engineer's department, firemen, oilers and water-tenders, are gradually promoted from coalpassers. When a civilian is employed as a laborer he can advance no higher, but in the navy, however, it is different, as there are many provisions for advancement. No recruit is competent to fill certain positions, as gunner's mate or boatswain's mate until he has been especially trained to qualify.

Mechanics in the navy average far better wages than those in civil life. The author has found this to be true from personal experience. There are no dues, strikes, lay-offs, pay stopped while sick, or any of the other hardships which are often encountered in civil life. When on the sick list the patient is excused from all duties, and all medical attendance and medicines are furnished gratis, and the patient receives full pay during the period that he may be sick.

Upon being recommended by their superior officers, certain members of the crew are sent to the different naval schools which are maintained ashore, to make them more proficient in their duties; while at the school members receive their regular pay and ration. Those who graduate are given a diploma and transferred to the various ships. In this

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manner the navy acquires men who are experts in their professions.

As a rule, after a man honorably discharged from the navy has remained in civil life for a short period (about two months), a longing for the sea is again felt, the result of which is that he will make up his mind to reenlist, especially if he was paid off with a small pay day. In the navy, the meal pennant (a red pennant hoisted at the signal yard during meal hours) is hoisted three times a day without fail. In civil life the meal pennant is often hoisted irregularly.

During the year 1906, over three quarters of a million dollars (\$750,000) was deposited in the ships' banks by the enlisted men. All money thus deposited draws interest at the rate of four per cent. per annum. This above mentioned sum does not include the enormous amount sent home by allotment.

The above paragraph explains why many of the enlisted men remain in civil life after being discharged from the service. The old saying "A sailor works like a horse for his money and spends it like a jackass," is not true of the men of the navy. Were the total amount of money deposited in the ships' banks and that sent home by allotment computed, it would be well into the millions.

Many bluejackets leave a "girl behind" when

they enlist. These men save their money with the expectation of settling down after the expiration of their enlistment, and in this way the service loses many good men who no doubt would reenlist for duty on the high (not the matrimonial) sea.

Good conduct medals are often presented the enlisted men by the Navy Department. Any one performing an extraordinary act of bravery is presented with a medal, and when convenient, the prospective recipient of the medal is ordered to Washington, D. C., where the presentation takes place.

SAILOR'S DUDS

The togs of a bluejacket are in a class by themselves. The quality of the materials used in making the clothes is unsurpassed. The Navy Department manufactures a large portion of this clothing; the remainder is let out by contract to private firms. As similar goods cannot be purchased elsewhere, the navy man is equipped with an outfit of clothing which cannot be duplicated.

Upon first enlisting the recruit is furnished with a complete outfit of clothing by the Government which consists of shoes, hats, various uniforms, several suits of light and heavy underwear, leggings, neckerchief and knife lanyard. All clothing issued thereafter is charged to the person to whom issued.

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A hammock furnished complete is also given. Sleeping in a hammock is quite comfortable; in warm weather, the clews (a series of cords which regulate the swing of the hammock) are so adjusted that the hammock swings flat. In cold weather, if the center clews are slackened the hammock will fit snugly to the occupant's body.

Each sailor has a ditty-box which is a small box made of hard wood. The lid is quite deep and contains letters and writing paper; the tray contains toilet gear and other trinkets, the bottom contains towel, shoe brush and the knickknacks which only a sailor can accumulate. A bluejacket can pack up and be ready for transfer within ten minutes if necessary.

AMUSEMENTS AND PASTIMES

Shore folks who are unfamiliar with man-o'-war life may form the opinion that life aboard ship is quite monotonous. Men who remain in the service do so because the service offers to them the best pay and general inducements. The amusements and pastimes aboard ship are of such a varied character that it is a difficult matter to enumerate all of them.

By making navy life congenial to the enlisted men the service retains many of them. The large type of ships carries a band. Evening concerts are

given for the crew and they go on deck and listen to the music — sometimes the sailors dance with each other.

Athletic sports are greatly encouraged by the Navy Department, and each ship is allowed a certain amount of money yearly with which to purchase sporting goods; each ship also has its own baseball and football teams. As nearly all of our ships travel around in fleets much time is devoted to sporting events. A trophy is generally given to the crew when a series of games, as baseball and football, is played.

Boat racing is one of the most exciting sports of the navy. When the crew of one ship wish to challenge another, the boat to be used is lowered; this crosses the other ship's bow at full speed; as it crosses the bow, the coxswain gives the order "Toss Oars," the race boat's crew raise their oars and hold them upright. This is a direct challenge, and should the crew of the challenged ship wish to race they would invite the racing boat's crew aboard and make arrangements for the same.

Boxing contests are also very popular and there are many expert boxers in the service. When it comes to financial backing for boat racing or other sporting events, the crews of the ships are "on deck" with the necessary funds.

Shore leave is frequently granted and the crew

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go ashore in watches or sections. At meal time the "bumboat" (shore boat) comes alongside the ship to peddle fruit and pastries. All forms of card games, checkers, chess and other games of skill are played, but no gambling is permitted. Should members of the crew be caught gambling they would be severely punished.

When members of the crew wish to visit other ships, a visiting party is made up and the list handed to the officer-of-the-deck who grants permission for the party to go visiting. The ship's boats are used to convey the visiting party to and from their destination.

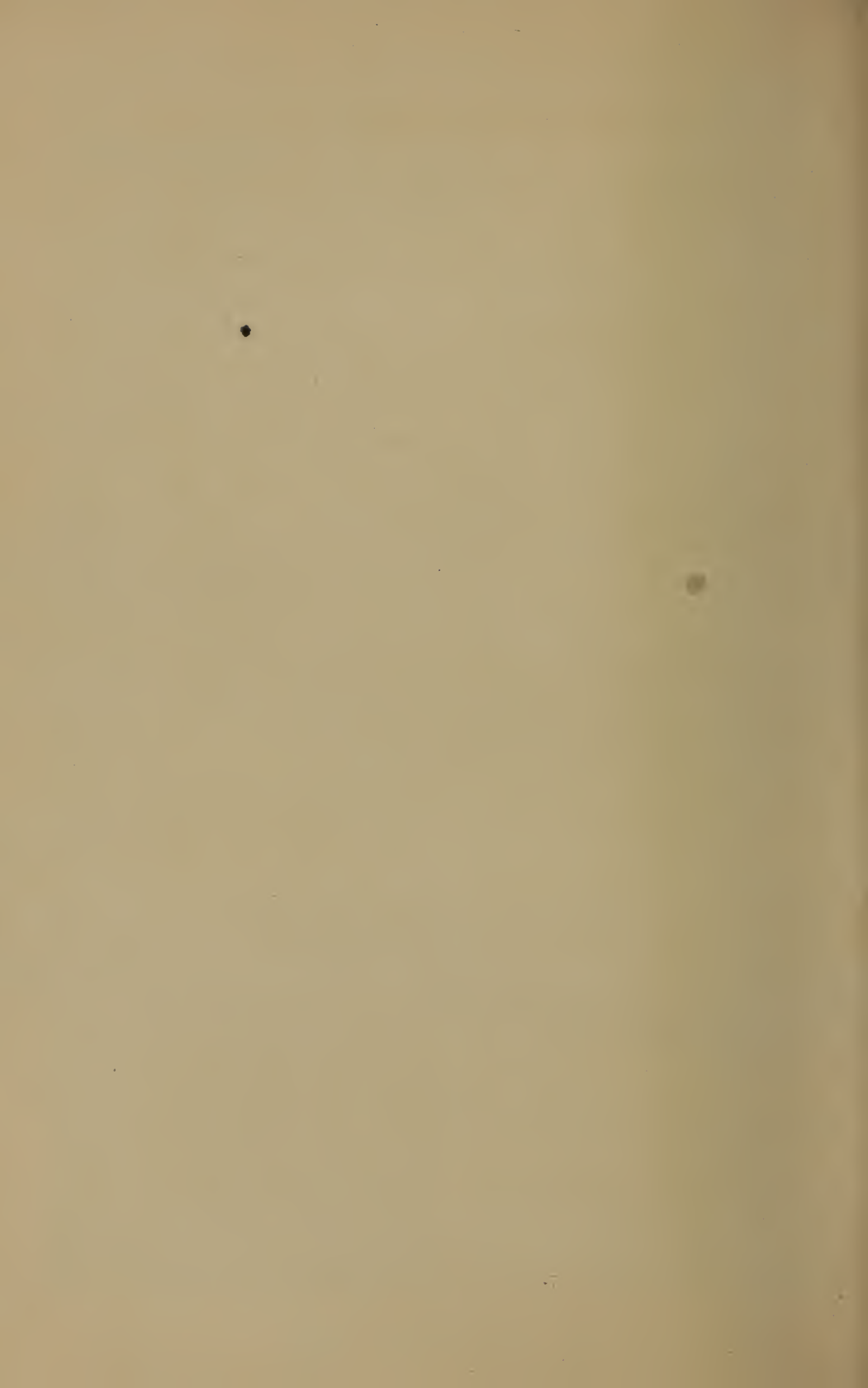
Often when the weather is fine, permission is granted to go swimming from the side of the ship. Any one wishing a swim dons a bathing suit and the instant swimming call is sounded there is a swarm of bluejackets in the water swimming and splashing about.

A boat is detailed to lay off from the side of the ship to render aid instantly in case of accident. The men are not permitted to remain in the water too long. When recall is sounded all hands come out.

Each ship has an up-to-date library which contains several hundred volumes, and the most popular books with the men are those on travel. Many members of the crew are talented singers and musi-



THE PENNSYLVANIA'S BROADSIDE. A few broadside guns of an armored cruiser.
The port side looking aft.



cians. It is quite a treat to hear a quartette singing on the forecastle (pronounced fōc'sl by seafaring men) to the accompaniment of several stringed instruments.

The dramatic talent has an opportunity to display itself at the various theatrical performances frequently given. Little artificial scenery is required, the big guns, neat appearance of the officers and crew, and the general surroundings furnishing all the necessary scenery. The stage is rigged up on deck. Officers and men of the fleet and sometimes people from shore are invited to the performance.

No admittance is charged at these theatrical performances, for the officers and crew furnish everything needed. The entertainments, of course, are more or less of a salty nature. Entertainments are also frequently given to aid some shipmate who has met with misfortune, and an admission fee is charged to entertainments of this kind. The amount netted from one of these performances is never less than \$500.00.

MAN-O'-WAR LINGO

Many of the terms and expressions used by the men in the navy are most peculiar. Should a civilian overhear two bluejackets conversing about the service he would hear many terms which would

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certainly be incomprehensible to him. The following list will give a fair idea of the meaning of some of the expressions:

“Going down hill”—over half the enlistment in.

“Rookie”—a recruit.

“Smokestack”—an imaginary jag.

“Ship over”—to reenlist.

“Jimmy Legs”—the master-at-arms of the ship.

“Black gang”—all men belonging to the engineer's department.

“Mailo”—the mail has arrived aboard the ship and is ready to be distributed.

“Blacky”—the blacksmith.

“Chips”—a carpenter's mate.

“Coppers”—the coppersmith.

“The Chief”—chief engineer of the ship.

“Lucky bag”—a room in which are placed all articles lost aboard ship.

“Jumped”—desertion by a sailor.

“Six months and a bob”—refers to one who has been court-martialed and sentenced to six months in prison and given a dishonorable discharge.

“Pipe down”—shut up.

“Belay”—hold on.

“Dog”—a bottle of liquor.

“Tell it to a marine”—a remark used when one

person does not believe a statement another is telling him.

“The ghost walking”—pay day.

“Pot on”—a person with a heavy list to port.

“Beach comber”—one who hangs around saloons ashore and who has no desire to work.

“Hike”—to go ashore on a heavy march.

“Sea-going”—traveling at sea.

“Mulligan”—a favorite dish of an unknown quality.

“Charley Noble”—the galley stovepipe.

“Sea-dog”—an old sailor with several enlistment stripes on his arm.

“Run up”—brought to the mast for offenses committed.

“Breaking it”—remaining overtime on shore.

“Down for a chance”—on the report for mast call.

“Canned Willie”—canned beef.

“On the books”—money due on the paymaster's books.

“Pie wagon”—the brig where prisoners are confined.

“Sea-lawyer”—one who thinks he knows more about the Blue Book than the captain.

“Hitch”—an enlistment.

“Hitched up”—married.

“Cum shaw”—a rake-off.

“Big ticket”—honorably discharge.

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“ Stone frigate ”—prisons ashore.

“ Sheeney ”—a person having a sewing machine and doing tailor work aboard ship.

“ Gadget ”—a makeshift name for any object.

“ Jaw-bone ”—credit.

“ Busted ”—disrated to a lower rating.

“ Hurdy gurdy ”—a sewing machine operated by hand.

“ Mud hook ”—the ship’s anchor.

“ Berth-deck-slusher ”—messmen who wait on the tables of the crew.

“ Rope-yarn Sunday ”—Wednesday afternoon when the crew overhaul their bag of clothing.

“ Dead soldier ”—an empty bottle.

“ Making knots ”—hurrying.

“ Micky ”—nickname for the U.S.S. *Mohican*.

“ Philly ”—nickname for the U.S.S. *Philadelphia*.

“ Show a leg ”—when the master-at-arms wakes the crew in the morning they call out, “ Rise and shine ” or “ Show a leg. ”

“ Stand by ”—be on hand.

“ Draws more water ”—receives more pay.

“ Blow-off-at-a-low-pressure ”—refers to a talkative person.

“ Under the gun ”—one sitting next the dealer in a friendly game of “ draw. ”

“ Got the wrinkles out ”—sensation of hunger removed.

“God's country”—any part of the United States.

“Douse the glim”—extinguish the light.

“Put in his oar”—to “butt in.”

“Sloper”—a person from the West coast of the United States.

“Snowdigger”—a person from the East coast of the United States.

“Batten down”—secure.

“Straight kick”—dishonorably discharged.

“Red house”—insane asylum.

“Swallowed the Blue Book”—one who is continually quoting the naval regulations.

“Caught a crab”—oar caught in the water.

“Shove off, Jack”—a hint to move on.

“Straggler”—a deserter who voluntarily gives himself up within a period of six months after desertion.

“Heave to”—stop.

“Swing ship”—placing the ship in position to enable the navigator to adjust the compass.

“All night in and beans for breakfast”—a remark that is made by one who has had no night watch and awakes with a good appetite.

CHAPTER IV

OFFICIAL DESCRIPTION OF A BATTLESHIP—ORDNANCE—MAIN GUNS—CREW OF A LARGE GUN—INTERMEDIATE AND SECONDARY BATTERY GUNS.—HOW A LARGE GUN IS MADE—AMMUNITION—TORPEDOES

OFFICIAL DESCRIPTION OF A BATTLESHIP

OWING to the fact that Chapters IV and V dwell principally on the material part of the navy this article entitled "Official Description of a Battleship" will convey to the reader an accurate idea of the many details which are provided for in making the plans and specifications of a battleship.

The chiefs of the different bureaus of the Navy Department at Washington submit to the Honorable Secretary of the Navy an annual report in printed form. This report contains in a condensed form all important data pertaining to each bureau.

The descriptive matter herein reproduced is taken

Official Description of a Battleship 85

from the Annual Report of the Chief Constructor of the United States Navy. This data pertains to the battleship *New Hampshire*. The battleships *Connecticut*, *Louisiana*, *Kansas*, *Minnesota* and *Vermont*, are sister ships of the *New Hampshire*; thus these six great battleships are designed on about the same plans.

Owing to the fact that the construction of the *New Hampshire* was started later than her sister ships, she may be equipped with a few more modern improvements; these improvements, however, are only of a minor nature. The important data, such as length, beam, and battery are identically the same. This type of warship was the first to be equipped with seven-inch guns which represent their broadside batteries.

The plans and specifications of a battleship, from which the various ship builders of the United States base their bids, is a voluminous document consisting of several thousand pages of printed matter.

The plans and specifications of first-class battleship No. 25, *New Hampshire*, authorized by Congress, were completed and advertised. The contract for this vessel was signed with the New York Shipbuilding Company, Camden, N. J., at a price of \$3,748,000.

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The general dimensions and features of the vessel are as follows:

Length on load water-line.....	450 feet
Breadth, extreme, at load water-line...	76 feet 10 inches
Displacement on trial, not more than.....	16,000 tons
Mean draft to bottom of keel at trial displacement not to exceed.....	24 feet 6 inches
Coal bunker capacity, about.....	2,314 tons
Coal carried on trial.....	900 tons
Feed water carried on trial.....	.66 tons

The hull is to be steel throughout, in accordance with the "Specifications for the Inspection of Hull Material."

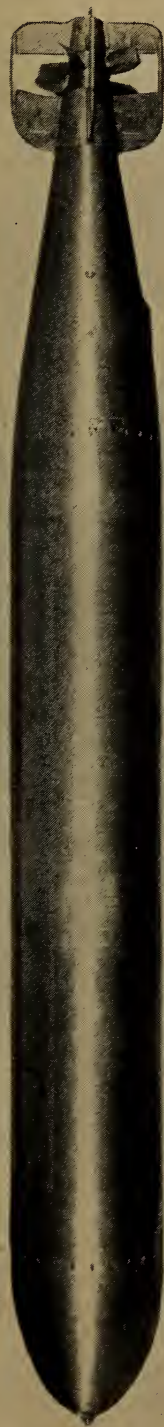
Armament:

Main Battery—

- Four twelve-inch breech-loading rifles.
- Eight eight-inch breech-loading rifles.
- Twelve seven-inch breech-loading rifles.
- Four submerged torpedo tubes.

Secondary Battery—

- Twelve three-inch (fourteen-pounder) rapid fire guns.
- Twelve three-pounder semi-automatic guns.
- Four one-pounder semi-automatic guns.
- Two three-inch field pieces.
- Two machine guns, caliber .30.
- Two automatic guns, caliber .30.



THE NEW BLISS-LEAVITT TURBINE TORPEDO. The new turbine torpedo, and some of the material trained to handle it.

The foregoing battery complete will be furnished by the Government, and will be mounted as follows:

The twelve-inch guns, in pairs, in two electrically controlled, balanced, elliptical turrets, on the center line, one forward and one aft, each with an arc of fire of about 270° .

The eight-inch guns, in pairs, in four electrically controlled, balanced, elliptical turrets, two on each beam, at each end of the superstructure.

The seven-inch guns, in broadside, on pedestal mounts on the gun deck behind seven-inch armor, each gun being isolated by splinter bulkheads of nickel steel of from one to two inches thick; forward and after guns arranged to fire right ahead and right astern, respectively; other seven-inch guns to have the usual broadside train.

The guns of the secondary battery in commanding positions, having a large arc of unobstructed fire, and protected wherever practicable.

All the seven-inch guns are so arranged that their muzzles train inside the line of the side armor, thus leaving a clear and unobstructed side when it is desired to go alongside a pier or vessel.

Arrangements will be made whereby the three-inch guns on the main deck can be quickly and conveniently dismounted, housed, and secured.

Four torpedo tubes and accessories will be installed, two each in forward and after submerged

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torpedo rooms. Directing stations will be installed ; also all necessary bench marks in connection therewith.

Armor and Similar Protection. The hull is protected at the water-line by a complete belt of armor nine feet, three inches wide, having a uniform thickness of nine inches for about 287 feet amidships, gradually decreased to four inches at the stem and stern.

The lower casemate armor extends to abreast the twelve-inch barbettes and reaches from the top of the water-line belt to the lower edge of the seven-inch-gun ports on the gun deck and is seven inches in thickness, the athwartship bulkheads at the ends of this casemate being seven inches thick.

The casemate armor around the seven-inch guns on the gun deck is seven inches thick and the splinter bulkheads are from one to two inches thick. The protection of three-inch guns is nickel steel, two inches thick.

The upper and lower casemate athwartship armor, extending from the shell plating to the twelve-inch barbettes, is to be seven inches thick throughout.

The twelve-inch barbettes extend from the protective deck to about four feet above the main deck and consist of eleven inches of armor in front ;

and in the rear, seven and a half inches above the gun deck and six inches between the berth and gun decks.

The twelve-inch turrets will have a front plate twelve inches thick, rear and side plates eight inches thick, and top plates two and a half inches thick.

The eight-inch barbettes will be six inches thick in front and four inches thick in rear, with the upper tube three and three quarter inches thick and the lower tube three inches thick.

The eight-inch turret front plate will be six and a half inches thick, the rear and side plates six inches, and the top plates two inches thick.

The conning tower will be nine inches thick; door, six inches thick; signal tower, six inches thick. An armor tube thirty-six inches in diameter will extend from the base of the conning tower to the protective deck and will be six inches thick throughout.

One torpedo-directing station, five inches thick, will be fitted near the conning tower. The directing station for after torpedo tubes will be located in the signal tower.

Teak backing of a minimum thickness of three inches will be fitted behind all side and twelve-inch turret armor, two inches of backing to be fitted behind the eight-inch turret armor; other armor will be fitted without backing.

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Protective Deck. There is a complete protective deck extending from stem to stern, the deck being flat amidships, but sloped at the sides throughout and sloped at each end. It will be built up of twenty-pound plating throughout, with nickel steel of forty pounds on the flat, except it will be eighty pounds forward and abaft twelve-inch barbettes over magazines and of 100 pounds on the slopes.

Nickel-steel Protection. The following nickel steel is to be furnished and fitted:

Upper strakes of protective deck plating, as indicated above; hatch covers and gratings in the protective deck; splinter bulkheads on gun deck; sponsons and wing plates for two forward three-inch guns and for four after three-inch guns on gun deck; bullet shields between wing plates for seven-inch guns; side protection and wing plates for three-inch guns on main deck; turret shelf plates; conning tower base plates; seven-inch gun-port sill plates; eighty-pound protection on ammunition hoist trunks not otherwise protected by armor; and eighty-pound protection on coaling trunks on slope of protective deck to the height of berth deck amidships.

Ammunition. The magazines and shell rooms are so arranged that about one-half of the total supply

of ammunition will be carried at each end of the ship.

Magazine bulkheads adjacent to heated compartments, such as fire rooms, engine rooms, and dynamo rooms, are arranged with ventilated air spaces.

Ammunition Supply. The ammunition for seven-inch and smaller guns will be conveyed by hoists directly from the ammunition rooms or ammunition passages to the deck on which it is required, or as near that as possible. These hoists will be driven at constant speed by an electric motor, and will be arranged to deliver not less than eight pieces per hoist per minute.

The number of hoists will be as follows: Twelve seven-inch, fourteen hoists for three-inch, three-pounder and one-pounder combined, and sufficient whip hoists to the top. To supply the seven-inch hoists, four horizontal ammunition conveyers, operated by electric motors, will be fitted in the ammunition passages for the transfer of ammunition from the handling rooms to the base of the hoists.

The turret guns will have regular turret ammunition hoists, operated by electric power; these hoists leading directly from the handling rooms or the ammunition passages to the turrets. The handling rooms will be isolated from the turrets. The turret

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ammunition hoist motors and controlling appliances will be installed, under the specifications of the Bureau of Ordnance.

For transporting twelve-inch, eight-inch, and seven-inch ammunition, torpedoes and warheads, trolleys and tracks will be fitted in the handling rooms, passages, and shell rooms.

Propelling Machinery. The engines will be of the vertical, twin-screw, four-cylinder, triple-expansion type, of a combined indicated horse-power of 16,500, and arranged for outboard turning propellers when going ahead. The steam pressure will be 250 pounds. The stroke will be four feet. The cylinder diameters will be sufficient for the required indicated horse-power at about 120 revolutions per minute. Each engine will be located in a separate water-tight compartment. They will be provided with all the necessary auxiliaries and accessories in accordance with the latest practice of the Bureau of Steam Engineering.

There will be twelve water-tube boilers, placed in six water-tight compartments. The type of boiler will be as approved by the Bureau of Steam Engineering. There will be not less than 1,100 square feet of grate and not less than 46,750 square feet of water-heating surface. The working pressure will be 265 pounds. The length of grates

will be about six feet, nine inches. The steaming capacity will be such that all steam machinery on board can be run at full power with an average air pressure on the fire rooms of not more than two inches of water.

All the necessary auxiliaries and accessories will be provided for the efficient working of the boilers.

There will be three smoke pipes, each 100 feet high above the base line.

Sixty-six tons of fresh water will be carried on trial in the double bottom or in reserve tanks for the use of the water-tube boilers.

Auxiliary Steam Machinery. The following auxiliary steam machinery of approved make and design, in addition to that pertaining to the main engines and dependencies, is to be installed complete.

Steering engine, windlass engine, ash-hoist engines for each fire room, forced-draft blowers, evaporating plant, to consist of not less than three units, having a total capacity of 16,500 gallons of fresh water per day, a distilling apparatus capable of condensing at least 16,500 gallons of water per day.

The vessel is to be heated with steam throughout.

The weight of all machinery and tools, stores and spare parts will be about 1,500 tons. This

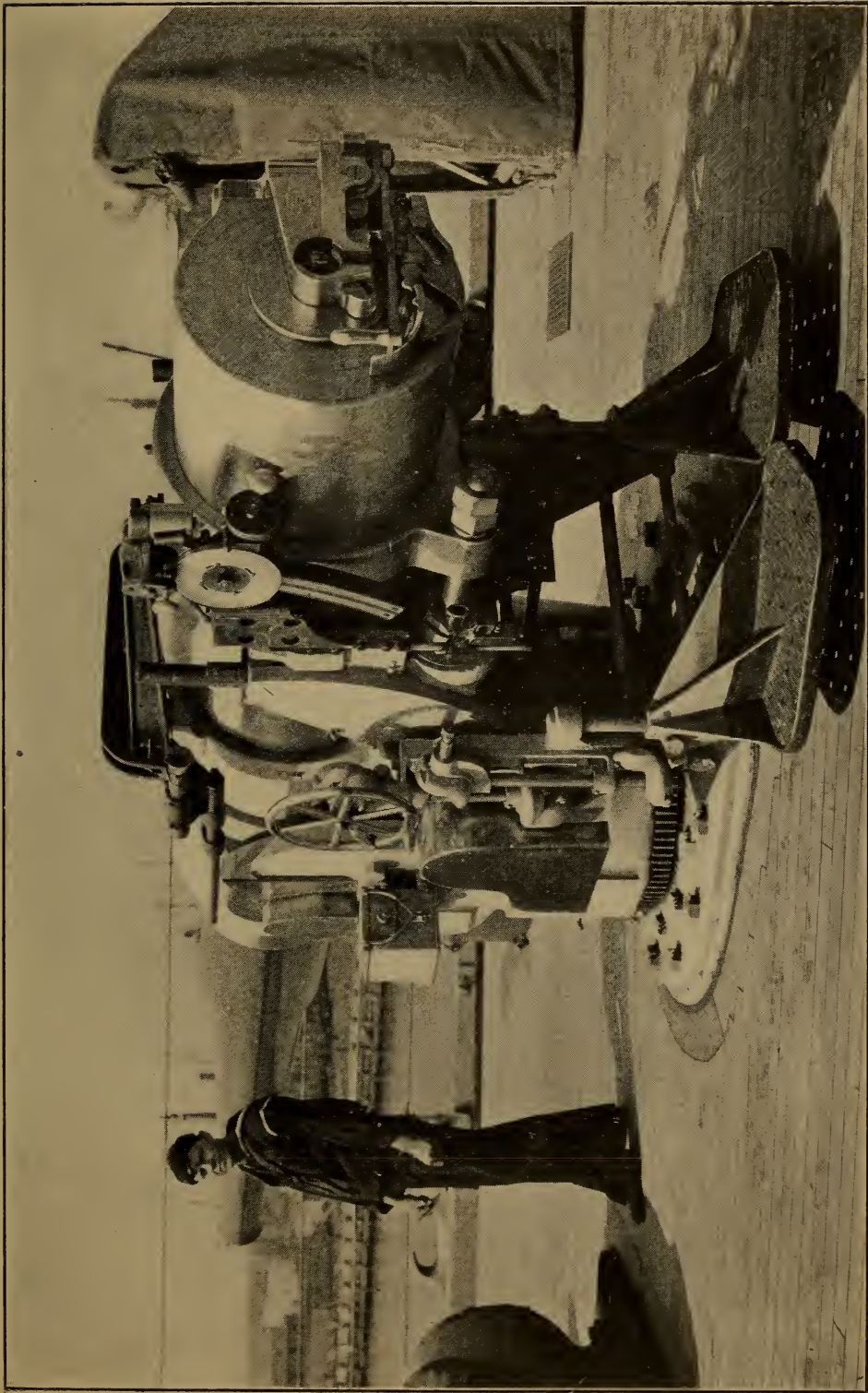
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weight must include all articles, except stores supplied by the Government, irrespective of name or use, coming under the cognizance of the Bureau of Steam Engineering, including water in boilers, condensers, piping, etc., but excluding the reserve feed water in the double bottom or tanks.

Electric Generating Plant and Equipment Requirements. The vessel shall be lighted throughout by electricity. The electric plant will be of not less than 800-kilowatt capacity (no units to be less than 100-kilowatt capacity), driven either by reciprocating engines or turbines, all generators to be of 125 volts pressure at the terminals and disposed in two separate and independent dynamo rooms.

There will be fitted all the usual means of interior communications, such as telephones, voice pipes, call bells, buzzers, gongs, annunciators, engine and steering telegraphs, revolution and rudder indicators, heeling indicators, fire alarms, warning signals, alarm signals, turret hoist indicators, electric log, etc.

Electric Auxiliaries. With the exception of the auxiliaries previously mentioned to be operated by steam, all power on board of the vessel will be electric, as, for instance, the refrigerating plant with a cooling effect of four tons of ice per twenty-four



A SIX-INCH GUN. A typical broadside gun that is installed aboard many of our warships.

hours, boat cranes, deck winches, turret-turning motors, ventilation blower motors, etc.

All main compartments of the ship below the gun deck, except the coal bunkers, will be provided with forced ventilation, there being not less than twenty-six blowers, with a combined capacity of not less than 100,000 cubic feet per minute. Special attention will be given to spaces subject to habitually high temperatures, such as engine rooms, fire rooms and dynamo rooms. The ventilation system will be designed to cut the minimum number of water-tight bulkheads. All blowers, except forced-draft blowers, will be electrically operated.

The coal bunkers will be arranged with satisfactory reference to the rapid and efficient supply of coal to the fire rooms, and have a maximum capacity of about 2,314 tons. There will be provided for coaling not less than six winches, twelve booms, and all necessary fixed chutes, scuttles, hatches, and other openings.

There will be two bill-boards and two hawse pipes, each hawse pipe to be so designed that stockless anchors may be stowed in it. There will be three heavy anchors, one of navy type and two of stockless type, and the usual small ones. Anchor windlass, with vertical spindle, wildcats, anchor davits, securing and tripping gear, controllers,

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ring bolts, riding bitts, cleats, pad eyes, and other fittings, will be provided.

The following boats supplied by the Government will be carried, adequate provision being made for their convenient stowage and handling; two electrically operated boat cranes, the necessary boat davits, adjustable boat chocks, and all necessary fittings being provided for this purpose:

- One 50-foot steam cutter.
- Two 36-foot steam cutters.
- One 36-foot launch.
- Three 33-foot launches.
- Five 30-foot cutters.
- Two 30-foot whaleboats.
- One 30-foot gig whaleboat.
- One 30-foot barge.
- Two 20-foot dinghies.
- One 16-foot dinghy.
- One 14-foot dinghy.
- Two life rafts.

The vessel is designed as a flagship, and the arrangement of quarters provides ample accommodations for the following complement, viz.:

- A flag officer.
- A chief of staff.
- A commanding officer.

Nineteen wardroom officers.

Ten junior officers.

Nine warrant officers.

Not less than 840 men, including 72 marines.

Provision will be made for carrying not less than three months' allowance of provisions and six months' allowance of clothing and small stores.

A complete drainage and flooding system will be provided.

Plumbing fixtures will be in accordance with the latest approved practice for all bathrooms, lavatories, and other spaces.

There will be a lower bridge both forward and aft and a flying bridge forward, according to the latest practice. On the flying bridge will be fitted a screen of brass. There will also be a brass chart house and emergency cabin suitably located.

There will be steel masts forward and aft, the foremast having an upper and lower top, the mainmast a lower top only. Masts to be arranged for wireless telegraphy. There will be one signal yard on each mast, also a searchlight platform forward and aft, with a lookout platform on foremast.

There will be approximately eighteen sliding water-tight doors and six armor hatches which will be worked on an approval system by power. All other doors and hatches throughout the vessel, as

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well as all fittings which can be satisfactorily standardized, will be strictly in accordance with standard plans which have been or may be adopted by the Department.

The following is the summary of weights to be carried on trial:

	Tons
Guns, mounts, magazine equipments, etc.....	1063
Ammunition, two-thirds cruising supply.....	405
Steam engineering complete, with water in boilers, condensers, piping, etc., and stores, etc., except stores supplied by the Government, not to exceed.....	1500
Engineering stores supplied by the Government, two-thirds full supply.....	26
Reserve fresh water for steaming purposes.....	66
Coal, normal supply.....	900
Boats and outfits.....	51
Masts and spars.....	31
Equipment complete, including anchors, chains, electric plant, etc., and equipment stores....	355
Miscellaneous stores and water, two-thirds full supply.....	83
Provisions, clothing, and small stores, two-thirds full supply.....	147
Officers, crew, and effects.....	113
Total protection, including armor, armor backing, armor bolts, and splinter bulkheads.....	3919

ORDNANCE

The armor and armament, with their many accessories, constitute the main fighting strength of the ship. All of Uncle Sam's late warships, built and building, have these important accessories; therefore they will be considered modern for many years to come.

The *Oregon* and her sister ships, the *Indiana* and *Massachusetts*, represent our first lot of first-class battleships; these ships were commissioned two years previous to the Spanish-American war. The *Oregon* has won the Gunnery Trophy twice in succession, and to win this much coveted prize, she competed with all the large type of ships in the navy. This demonstrates the fact that our oldest battleships are yet quite modern in many respects.

When a new type of gun or projectile is invented, the Navy Department tests the merits of each and should the results prove satisfactory, the gun or other improvement is placed in use. The Government never jumps at conclusions, for all improvements are adopted after a long period of tests and experiments. In this manner our warships are kept up to the highest standard of efficiency.

After the ship is launched the armor is set in place. In some cases, however, the builders may

3
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install a portion of the armor before launching. On the sides of the ship, a few feet below the water-line, is a shelf-like arrangement on which the armor rests as it is bolted to the sides. This armor is very costly and is made by various processes, some of which are secret.

All armor is subjected to a rigid test. When one lot of armor is made, certain pieces are selected from it and sent to the proving grounds where it is set up for the large caliber guns to fire at. Should the armor fail to stand the various tests, the entire lot is condemned. The manufacturers know from the blue prints the exact size and shape of each section of armor, also where all bolt holes, etc., should be.

In making armor, a batch of metal is smelted in the furnace and when ready, the molten metal is poured into a mold which forms the armor ingot. After forming, the ingot is taken to a huge heating furnace where it is heated and brought to a forging press where it is soon worked down to the size desired. After forging, the plate is face-hardened by different processes.

When the armor plate is trimmed, tempered, and all machine work completed, it is taken to a powerful hydraulic press which soon forms the plate into any shape desired. When the armor has been completed and tested it is then forwarded to the

ship designated where the ship's builders secure it in position. All bolt holes and other machine work on the plate must be accurate, as all joints fit snugly. The thickness and quality of armor vary according to the type of ship. Armor is made to prevent shells from injuring the ship, and the object in face-hardening the armor is to try to give it the resisting power necessary to deflect or break up all shells which may strike it. Only the outer side of the armor is face-hardened which varies in resisting power according to the process to which the plate is subjected. The conning tower, military masts, sighting hoods, ammunition tubes, protective deck and other parts of the ship are also well armored in proportion.

MAIN GUNS

The guns of a battleship could be divided into three classes: Main, intermediate, and secondary battery guns. The main battery consists of eight-, ten-, twelve-, or thirteen-inch guns. All main battery guns installed aboard a warship are mounted in pairs, in turrets. The barbette, which is similar to a circular fort, extends up from the handling room to a few feet above the main deck. On top of the barbette is a series of rollers on which the turret revolves; the two gun mounts and loading mechanism, revolving as one.

Our late type of ships has counterbalanced turrets; weights of armor, gun mounts, etc., are so adjusted that the ship will not list were the main guns trained to one side. Training the main guns to either port or starboard, with the old-style turrets, would give the ship a heavy list accordingly, thus exposing the lower part of the armor belt to the fire of the enemy.

Located at the bottom of the turret is the handling room, where the ammunition is trolleyed from the magazines to the ammunition car which brings the ammunition directly in front of the breech end of the gun.

The guns are mounted in such a manner that they will withstand the terrific strain imposed upon them and their accessories when fired. The gun trunnions (cylindrical projections on each side of a gun which support it on the gun carriage, thus allowing the gun to be elevated or depressed) rest on the saddle, the saddle rests on the slides and is held in place with large steel straps and clips. Attached to the outer end of the saddle are two large pistons which lead into the recoil cylinders.

There are two types of recoil cylinders; one type is filled with recoil liquid and contains recoil springs; the other is worked by hydraulic power. In hydraulic power turrets similar to the *Oregon* type, the recoil cylinders contain a water pressure



A GROUP OF YOUNG NAVAL OFFICERS. These new midshipmen will eventually be in command of Battleships.

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of about six hundred pounds to the square inch which is supplied by huge hydraulic pumps located below the water-line. When the guns are in action (both guns in a single turret are used individually, as each has its own loading mechanism) these pumps are continually going in order to retain pressure for the recoil cylinders and rammers.

The supply pipes from the pumps are connected at the back end of the recoil cylinders and are equipped with check valves. The front end of the recoil cylinders contains a series of relief valves set at a high pressure. The instant the gun is fired the check valves in the supply pipes close; were these valves to fail in performing their functions, the pipes and pumps would burst from the sudden pressure created.

The interior walls of the recoil cylinders contain a series of grooves. The pistons, upon entering the recoil cylinders, force the water past these grooves, gradually checking the recoil. There is no escape for the water displaced by the pistons entering the cylinders except through the relief valves which are forced open by the enormous pressure created. There are several sets of relief valves set at various pressures; should one set fail to work, the other would, thus relieving the terrific strain.

When the gun ceases recoiling, the relief valves

close and the check valves in the supply pipes open, and the pressure formed against the back of the piston heads quickly forces the gun out to battery (loading position). Fresh water is used by the hydraulic pumps; the water escaping from the recoil cylinders is piped back to the fresh-water tanks where it is repumped.

Officers are stationed in the fighting tops to ascertain the range which is signaled down to the men in the turrets. In action, the results of the firing can be better judged when taking observations from an elevated position. The range continually varies when in battle, for the opposing fleets are constantly maneuvering to gain a more advantageous position.

CREW OF A LARGE GUN

Several hundred men are concerned directly and indirectly, in operating the big guns. Coalpassers trolley the coal to the firemen; the firemen keep steam in the boilers with which to operate the machinery of the ship; thus the division of labor continues along the line until we come to the gun's crew proper.

A large number of men are required to handle the guns and ammunition. Extra men must also be available, for during battle many may be put out

of action. The following will give a fair idea of the duties performed by a large gun's crew:

Turret Officer has complete charge of the turret and gives all orders necessary. The turret contains speaking tubes which enable the turret officer to be kept fully informed regarding the movements of the enemy and how the shots are striking.

Turret Captain is next in command after the turret officer. Should any accident befall the turret officer, the turret captain then takes charge.

Trainers keep the gun trained toward the target while it is being loaded and fired. When fired it is placed in loading position; upon being reloaded the gun is quickly sighted on the mark.

Gunpointer sights and fires the gun with the assistance of the trainers. Much responsibility rests upon the gunpointer, for while the gun is being sighted the firing lanyard is in his hand. Upon sighting the gun properly the gunpointer fires it. A percussion or electric primer is used for igniting the powder charge.

Gunner's Mate is in charge of the handling room where all ammunition is loaded into the ammuni-

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tion car, which brings the ammunition directly in front of the breech of the gun when needed.

Rammer Man operates the rammer which rams the shell home. The rammer forces the shell off the ammunition car into the breech of the gun. All rammers and training of turrets are operated by hydraulic or electrical power. It is quite dangerous to use steam power owing to the heat created.

Powder Men take the powder from the ammunition car when it arrives at the loading platform. This powder is put up in bags and when the rammer recoils home it is quickly put into the powder chamber.

Plug Man operates the breech-plug mechanism. When the gun is loaded the plug man quickly closes the breech-plug; this movement locks it into position and the gun is then ready for firing.

Sight Setter adjusts the sights when ordered by the turret officer. He also watches the sights to ascertain whether they have become deranged from the concussion.

Handling Room Crew work in the handling room, where all ammunition is trolleyed from the magazines

Intermediate and Secondary Battery Guns 107

to the ammunition car. A large number of men are also detailed to work in the magazines.

INTERMEDIATE AND SECONDARY BATTERY GUNS

Four-, five-, six-, and seven-inch guns are installed in the intermediate battery and they represent the broadside guns of the ship. Some ships are equipped with five-inch guns in the intermediate battery, while others may be equipped with guns of a larger caliber.

The guns are mounted on a permanent pedestal mount and they recoil on about the same principle as the hydraulic power guns, excepting that the recoil cylinders of all guns of the intermediate battery are filled with recoil liquid, consisting of glycerine and water. The back end of these recoil cylinders contains powerful steel springs. When the recoil pistons meet these springs, they take up the last of the recoil and quickly force the gun out to battery. On the larger caliber guns, counter recoil springs are used which take up the jar as the guns return to battery.

The intermediate guns are operated by hand and are easily manipulated, for the gun and its mechanism revolve on top of a series of small rollers, while other parts are connected with cogs or worm-gear. These guns are fired with greater rapidity

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than the main guns on account of the fixed or semi-fixed ammunition used. When the gun is fired the gunpointers and trainers keep it trained and sighted on the mark while the loading process is going on. Ammunition hoists are placed conveniently at hand to supply the guns with the necessary ammunition.

Many of our new type of battleships are equipped with a broadside of twelve seven-inch guns, which are independent of the main guns; the main guns consisting of four twelve-inch, and eight eight-inch guns.

The guns of the intermediate battery are well protected by the casemates or side armor which extend above the main armor belt.

The intermediate and main battery guns are sighted with telescopic sights, the outer end of which contains cross wires. When the gunpointer has the cross wires on the mark he fires the gun. The secondary battery guns are equipped with bar sights.

Secondary battery guns vary in caliber from three-inch down to the smaller caliber machine guns. One-, three-, six-, and fourteen-pounders (a fourteen-pounder and a three-inch gun are practically the same) constitute the secondary battery, and are of great value in repelling torpedo boat attacks, bombarding at close range, *etc.*

These guns work automatically or semi-automatically. When a semi-automatic gun is fired the concussion from each shot is utilized to eject the empty cartridge case. All ammunition used by the secondary battery is known as fixed ammunition; the powder and shell are made up in a single cartridge case similar to rifle ammunition.

A machine gun has more than one barrel, each barrel firing individually. By turning a crank or lever the gun will fire several hundred rounds per minute, while the ammunition holds out. The ammunition is supplied from a belt, or drum. By using fixed ammunition the hail of fire is terrific.

Semi-fixed ammunition is in two parts; the shell is first loaded into the breech of the gun and the powder charge which is made up in a heavy metallic case is inserted behind the projectile.

Each ship carries two three-inch field pieces which are mounted on a wheeled truck. These guns, with the machine and automatic guns, are taken ashore with the battalion. A small army of men could be held at bay with these guns.

HOW A LARGE GUN IS MADE

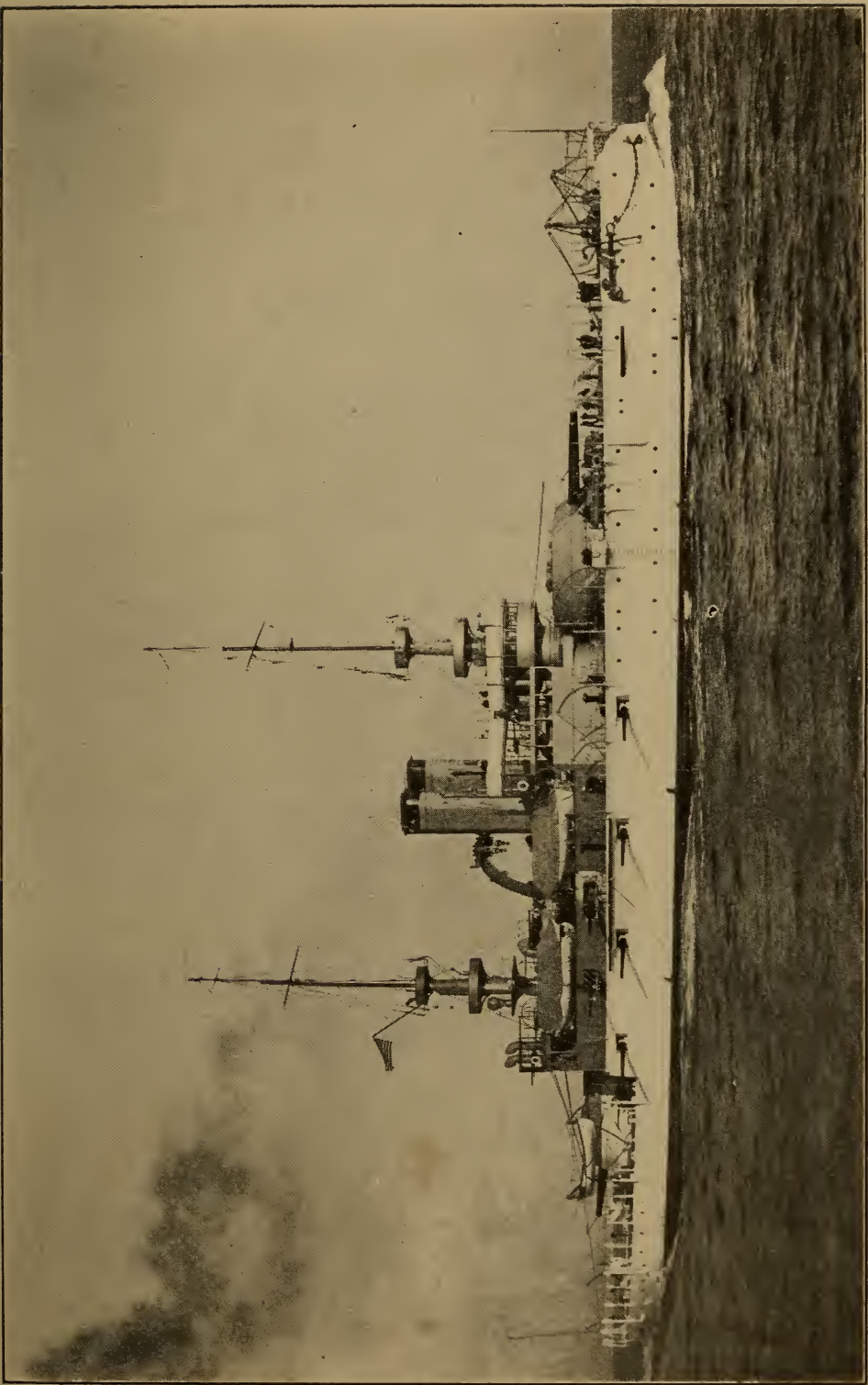
The guns installed aboard a warship are so constructed and mounted that, should an accident occur to the gun, it could be easily replaced with a new one.

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The labor, patience and experience involved in the manufacture of a large gun are enormous. In making a large gun, the gun metal is smelted in a huge ladle and then poured into a mold and when the mold is filled the top is securely closed. At the bottom of the mold are hydraulic rams which exert a great pressure on the molten mass and cause it to form compactly, besides forcing clear all air holes.

When the metal has become cool, it is removed from the mold and the ingot is roughly bored. After boring, the tube is heated in a furnace and forged out on a mandrel, and is then put through several processes of tempering. The tube is now set up in a huge lathe where the outside is turned down to the size desired. This tube is quite thick at the breech end and gradually tapers toward the muzzle.

Large steel jackets and hoops which are slightly smaller in diameter than the outer diameter of the gun, are heated in a furnace in order to expand them, and are dropped over the gun while hot; upon cooling they contract, thus greatly reenforcing the gun. After the jackets and hoops have been assembled, the tube is again set up in the lathe and rebored to the size desired. During these various operations the gun is carefully examined to detect any flaws.



U. S. S. ALABAMA AT SEA. A large warship steaming through the water, creates a formidable scene.

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When the gun is rebored it is set in a rifling machine which cuts a series of riflings in the bore. These riflings commence at the inner end of the powder chamber and extend throughout the bore of the gun. The riflings give the projectile a rotary motion, which causes it to speed true on its course and prevents it from tumbling or sagging. A groove is cut in the shell to which the rotary band is secured. This band is made of copper and is slightly larger than the bore of the gun, and when the shell is rammed home the band strikes against the rifling.

At the breech all necessary slots and screw holes are made. The breech-plug mechanism of a large gun appears to be a complicated affair, yet it is quite simple. By operating a single lever the breech-plug unlocks itself and swings open. This breech-plug contains a series of slots; when the plug revolves a certain distance it is then unlocked which allows it to swing open. Upon closing the breech-plug these movements are reversed.

When the gun is completed it is sent to the proving ground at Indian Head, Md., where it is severely tested. After the gun has passed the various tests, it is either sent to the ship designated or kept in stock until needed.

Previously, the Government manufactured its own guns, but of late many contracts have been let out

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to private firms. This has established many gun factories throughout the country, which will be of great value in time of war.

AMMUNITION

Smokeless powder is now used throughout the navy. This powder is of great strength, for an ordinary smokeless powder charge of a modern gun requires a much smaller amount than the old kind. When a gun was fired with the old-style powder, the ship became enveloped in a cloud of smoke, and should there be no breeze at the time, the smoke would hover about the ship and interfere with the firing until it had cleared away. This difficulty has been remedied, however, by the use of smokeless powder.

Three different types of shell are used; armor piercing, shrapnel and common. These shells are formed in a mold and forged down to the required size. After forging, the shell is trimmed on the lathe, interior hollowed out, and all other necessary machine work is completed.

Armor piercing shells are especially hardened at the nose to enable them to penetrate the armor of a ship. Secured at the nose of the shell is a lubricating cap filled with a soft metal which acts as a lubricant and assists the shell to penetrate the armor more easily. Many armor piercing shells contain a

bursting charge which explodes similar to common shells.

Common shells are made on about the same principle as armor piercing shells. The common shell, however, contains a larger bursting charge. Many shells are equipped with time fuses. By knowing the range, resistance of shell leaving the gun, strength and weight of powder charge, the time occupied by the shell in reaching the mark can be easily figured. The time fuse is set accordingly, allowance being made for the shell to penetrate before exploding.

Shrapnel shell has a large cavity bored out of its interior. This space is filled with many small metal balls and among these balls is a small charge of powder. The time fuse can be set so that the shell will explode as it is about to strike the mark, and the momentum of the burst shell will cause the fragments and small balls to be hurled in many directions, thus causing great destruction. The larger size shell is equipped with a base fuse which is set in the center of the bottom of the shell. Upon impact, a plunger springs forward and explodes the primer, which in turn ignites the powder charge contained within the shell.

All ammunition is carefully stowed in the magazines. The powder charges for the larger caliber guns are put up in copper tanks or tubes, each con-

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taining one charge. This powder is made up in sections which fit snugly into the powder chamber of the gun. At the base of each section is a small amount of black powder which causes the smokeless powder to ignite more freely when the gun is fired. Each powder charge is indexed, showing the strength, and date of manufacture.

The shells are stowed in the shell rooms. All powder charges and shells are piled in racks or bins and are well secured to prevent them from breaking adrift when the ship is at sea. The magazines are kept well ventilated, and in case of fire they are quickly flooded, as each contains one or more flood cocks connected with the sea. These flood cocks are operated from the upper decks and upon being opened they let in a great volume of water.

The ammunition for the smaller caliber guns of the intermediate and secondary batteries is stowed in separate magazines. All guns of these two batteries, from five-inch to the automatic guns, use fixed ammunition which is stowed in boxes containing one or more rounds according to the caliber of the gun. Much care and precaution is taken with the magazines at all times. Should one explode great destruction would follow.

The following table gives the weight of projectiles used in the navy. It was the author's intention to also include the weight of powder charge

used in firing each projectile. The data, however, would be unreliable owing to the fact that the weight of powder charges is being constantly altered. This is quite necessary to increase the velocity of the shell.

WEIGHT OF PROJECTILES

1-pounder gun	.....shell	1 lb.
3-pounder	“	3 lb.
6-pounder	“	6 lb.
3-inch	“	14 lb.
4-inch	“	33 lb.
5-inch	“	50 lb.
6-inch	“	100 lb.
7-inch	“	165 lb.
8-inch	“	250 lb.
10-inch	“	500 lb.
12-inch	“	850 lb.
13-inch	“	1100 lb.

SHELL MEASURE

2 thirteen-inch	.....	1 long ton
12 seven-inch	.....	1 short ton
8 eight-inch	.....	1 ton
2 ten-inch	.....	$\frac{1}{2}$ ton
1 six-inch	.....	1 cwt.
1 five-inch	.....	$\frac{1}{2}$ cwt.
1 one-pounder	.....	1 lb.

TORPEDOES

A large fleet of torpedo boats is maintained to fight with this deadly weapon—the torpedo. In addition to this craft, the majority of our battleships and cruisers are equipped with torpedo tubes and the necessary apparatus required for torpedo work.

Torpedoes are fired from a tube. There are three general designs of tubes used; one is submerged (or below the water-line), one a lower deck tube and is just above the water-line, and a third an upper deck tube used on the upper deck of torpedo boats. All of these tubes may be fired (discharged) by powder or compressed air, as may be desired. When the torpedo is locked in the tube and charged with the necessary pressure of compressed air it is ready for firing.

The Whitehead torpedo has been the type in use for several years. The Navy Department has recently adopted a new type known as the Bliss-Leavitt turbine torpedo. The power of this torpedo is much greater than that of the Whitehead type. While the Whitehead is capable of making twenty-eight knots speed at a 900-yard range, and twenty-two knots at 1500 yards, the new turbine torpedo makes a guaranteed speed of thirty-six knots at a 1200-yard range, and twenty-eight knots at 3500 yards.

The turbine type is well adapted for use in submerged torpedo tubes. This type of tube is much safer than the old-style tube that was located above the water-line. The submerged type is below the water-line, which protects the torpedo room from the fire of the enemy. There are two sizes of torpedoes, eighteen-inch and twenty-one-inch. It is claimed that the eighteen-inch torpedo costs \$5000, while the twenty-one-inch one costs a proportionate amount greater. This sum is really insignificant when one considers the loss of a battleship costing from five to ten million dollars. A few successful torpedo attacks on a fleet of warships would soon decide the result of a naval engagement.

A torpedo is divided into three main sections; the forward (front) end is known as the warhead, and contains 132 pounds of guncotton; the amidship (center) section is known as the air chamber, into which the compressed air is forced; the after (rear) end contains the turbine engine which operates the propellers. Two propellers are used which revolve in opposite directions at a high rate of speed. Located in these three main sections are other minor compartments, which contain the various devices which guide and regulate the torpedo after it is fired from the ship.

The torpedo contains horizontal and vertical **rud-**
ders which are so regulated by sensitive **devices**

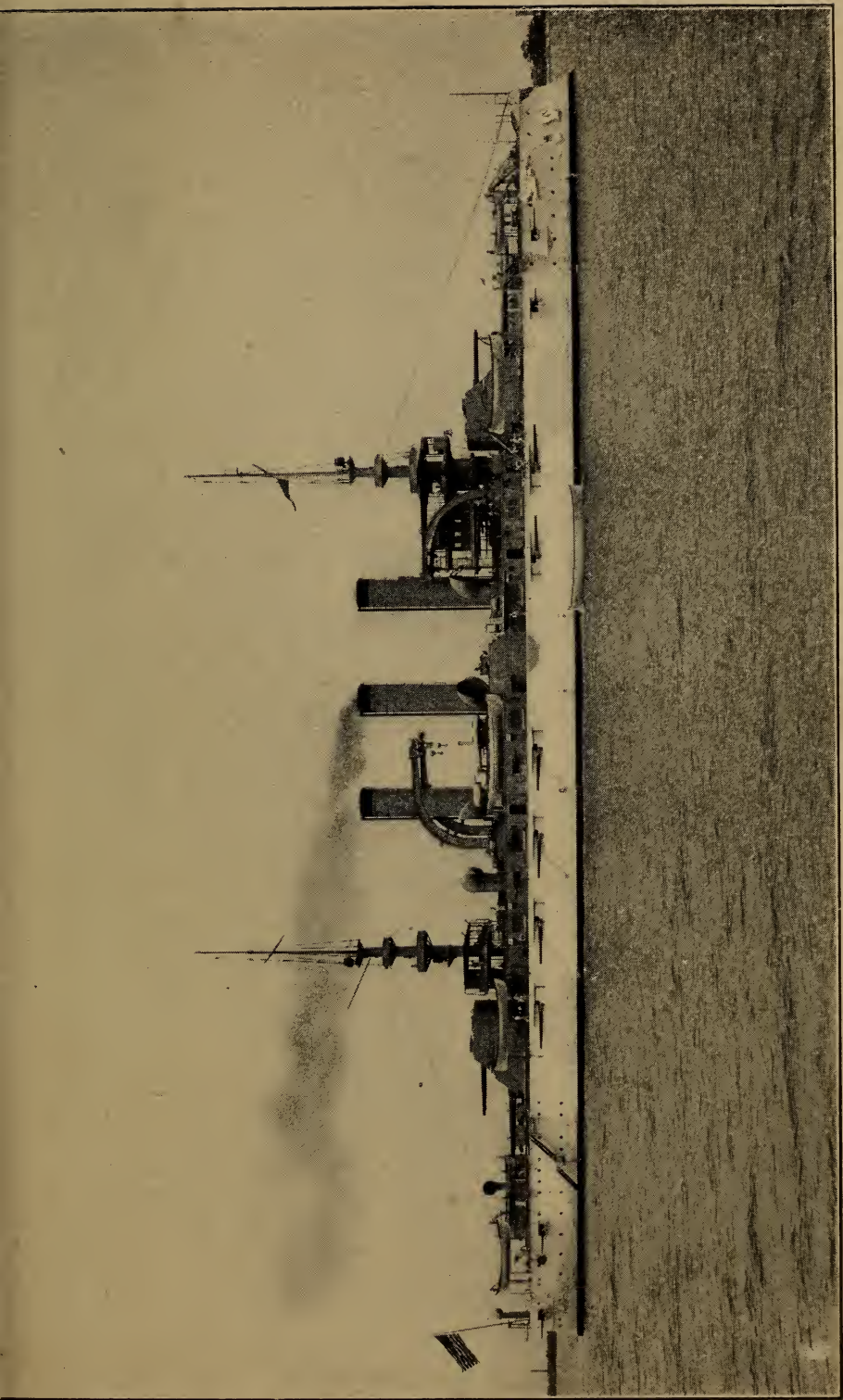
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that they will cause the torpedo to travel true and keep it submerged the desired depth. So sensitive is this steering and depth regulating apparatus, that even though there were heavy swells running at the time the torpedo was fired, the torpedo would rise and fall in proportion with the swell above. The depth of submersion is about eight feet which is sufficient, since it is only intended to strike the enemy below the armor belt.

Torpedo practice is held frequently. One form of torpedo practice is with a floating target which is towed full speed past the ship, the ship speeding twelve knots or more in the opposite direction. In firing torpedoes from a battleship the methods vary. The range between the ship and the target is regulated according to the form of torpedo practice.

The torpedo is charged with 2225 pounds pressure of air which is furnished by powerful air compressors. The outer end of the tube moves in a hollow ball-joint; the inboard end travels over a circular track which is marked with a set of figures. When the torpedo is fired, the men stationed in the torpedo room are unable to see what they are firing at. The torpedo room is located behind the armor belt, in which there is an opening only large enough to permit the passage of the torpedo.

The officer in charge of the torpedo firing ascertains the range of the target or enemy by means of



U. S. S. RHODE ISLAND. A beautiful view of one of our new type of battleship just commissioned.

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a sensitive instrument known as the torpedo director. The figures marked on the circular track over which the inner end of the torpedo tube passes, correspond with the figures of the torpedo director; by this means the tube is kept trained, since the figures are being constantly signaled to the men stationed in the torpedo room.

As the target and ship are moving in opposite directions, the tube is kept trained on the mark until the torpedo is ejected from it, or the target is out of range. A sudden release of compressed air ejects the torpedo, and as it leaves the tube the machinery starts in motion. Located in the air chamber is a large alcohol lamp which is lighted automatically as the torpedo leaves the tube. This lamp heats the compressed air in the air chamber, giving it greater expansive power.

An automatic stop can be so regulated that the torpedo will stop itself after traveling a certain distance. In time of war the torpedo can also be regulated so that in case it failed to strike the enemy it would sink to the bottom of the sea. A floating torpedo with a warhead attached is a menace to navigation. A drillhead is used in time of peace which is of the same size and weight as the warhead.

To prevent premature explosion another ingenious device is used. Located at the nose of the warhead is a miniature propeller, which is made to revolve by

the friction of the water as the torpedo speeds through it, and a small shaft is connected with this propeller which unscrews a locking nut; the torpedo will not explode until the locking nut works clear. This device allows the torpedo to get clear of the vessel firing it.

The majority of the enlisted men detailed for torpedo work are gunner's mates, who are graduates from the Gunnery School, where torpedo work is made a special study.

CHAPTER V

NOMENCLATURE OF THE SHIP—DRAINAGE SYSTEM—
VENTILATION SYSTEM—FRESH AND SALT WATER
SYSTEMS—DESCRIPTION OF UNITED STATES
VESSELS—BATTLESHIPS BUILT—ARMORED
CRUISERS BUILT—MONITORS BUILT
PROTECTED CRUISERS BUILT—HOW
THE NAVY HAS GROWN IN
FOURTEEN YEARS.

NOMENCLATURE OF THE SHIP

MILITARY *Mast* is the name given to the steel masts of the ship and they are armored at the base. The fighting tops are attached to these masts and are used mostly for observation and range finding.

Cranes are used for hoisting and lowering boats, and have a large tapering arm which revolves. The cranes are also used for coaling ship, taking aboard stores, etc. They are operated by either electrical or steam power.

Bridge. This is a long, narrow structure built up from the superstructure deck. The pilot-house.

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chart-house, steering-wheel, speaking tubes, speed annunciator, compass and signaling apparatus are located on the forward end of the bridge.

Emergency Cabin. A small room located at the forward end of the bridge which is used by the captain during a storm of long duration. In time of war, should an engagement be imminent, the captain would occupy the emergency cabin in order to be at hand.

Signal Yard. Near the top of each military mast is a small signal yard used for hoisting signals from the bridge. Warships are equipped with either one or two military masts.

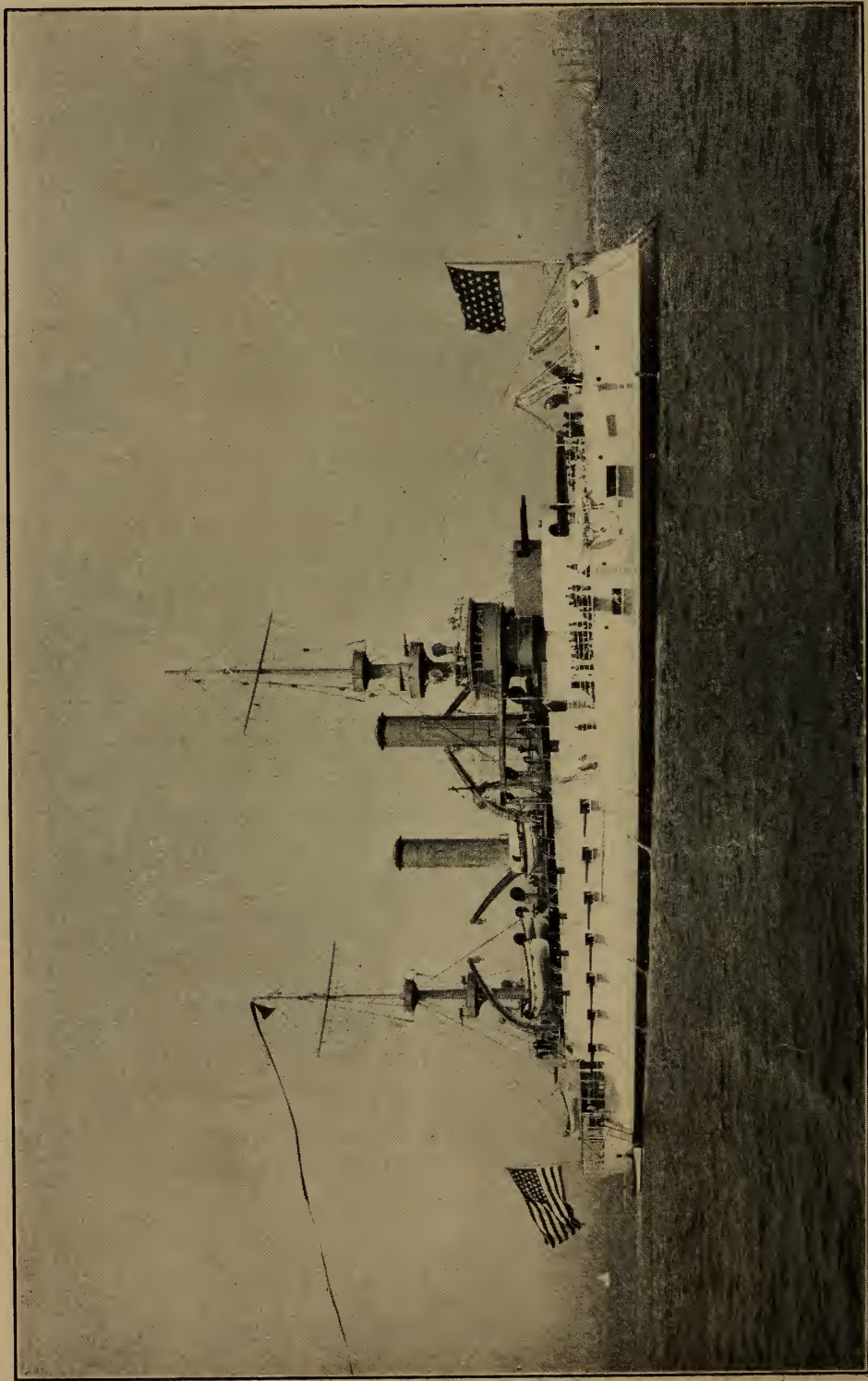
Conning Tower is located directly under the forward end of the bridge and is made of heavy armor and contains many peep holes. The interior contains the necessary apparatus for navigating the ship. The conning tower is used only in time of action.

Side Lights. When at sea a red light is displayed from the port side, and a green light from the starboard side of the ship. When two or more ships are in close proximity at night, these lights define the course each ship is steaming.



BOXING ABOARD THE WEST VIRGINIA. This bout is no tame affair. Both parties are striving for the decision.

Copyright, 1905, by Enrique Muller.



A HOMEWARD-BOUND PENNANT. When ordered home from a foreign station, the crew buy a "homeward bounder."

Superstructure Deck. This deck is built above the broad portion of the main deck. Hammock nettings, galley, and engine room hatches, ventilators, cranes and the main portion of the secondary battery are located on this deck.

Main Deck. This deck extends from stem to stern. The forward end is known as the forecastle; the after end as the quarter-deck. The main caliber guns are located on the center line of the main deck.

Hawse Pipes. A heavy casting through which the anchor chain passes on its way to the sea.

Bitt. A heavy piece of metal securely bolted to the deck. A bitt has two upright arms to which lines or cables are fastened.

Sea Ladder. This consists of a series of small metal steps which are secured permanently against the ship's side. A portable ladder which can be folded up is known as a Jacob's ladder.

Scuppers. Heavy pipes or tubes which drain the water from the waterways to the sea. The waterways are channels on the outer edge of the deck which lead the water to the scuppers.

Davits are heavy metal arms which extend over

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the side of the ship and are used for hoisting boats and stores.

Tackle. A set of blocks and a rope used for hoisting purposes. The more sheaves in the blocks, the greater the power.

Lower Booms are extended from the ship's sides. When the anchor is dropped these booms are rigged out and all boats in the water, not in use, are made fast to them.

Air Ports. On the lower decks are many air ports used for ventilating and lighting purposes. They are made of heavy glass and can be opened or closed at will.

Battle Ports are attached over the air ports, and are lowered and secured when the big guns are in action.

Grappling. A small anchor with several claws which is used by the small boats.

Harness Cask. An oval-shaped cask used for stowing salted meats.

Scuttle Butt. A tank where the crew get their

drinking water. A cooling pipe, which is connected with the ice machine, is located inside the scuttle butt keeping the water cool at all times.

Binnacle. A casing around the compass. On each side of the binnacle is a small lamp which lights the interior and enables one to read the compass card at night.

Hatch Coamings. The parts of a hatch which extend above the deck and prevent the water from getting below. A hatch is an opening in the decks used for traffic or cargo.

Well. A certain part of the main compartments where all water gathers. A sounding tube leads to the upper deck, through which the sounding rod is lowered to ascertain whether the ship is leaking. The suction pipes from the pumps are also located in the well.

Wildcat. A heavy slotted casting on the anchor engine into which the links of the anchor chain fit snugly as the anchor is being hoisted or dropped.

Stopper. A heavy hook with a long shank, one end of which is hooked into a ring bolt and the balance lashed against the anchor chain, thus helping to secure it.

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The Lead is a heavy lead weight with a small line attached which has the fathoms marked on it. At the bottom of the lead is a hole filled with tallow to ascertain the nature of the bottom of the sea. Were the bottom muddy, mud would stick to the tallow.

Armory. A room or compartment where cut-lases, rifles and pistols are stowed. A gunner's mate is in charge of the armory.

Double Bottom. The ship has practically two bottoms which are independent of each other. The space between is called the double bottom. Fresh water can be carried in the double bottom if necessary.

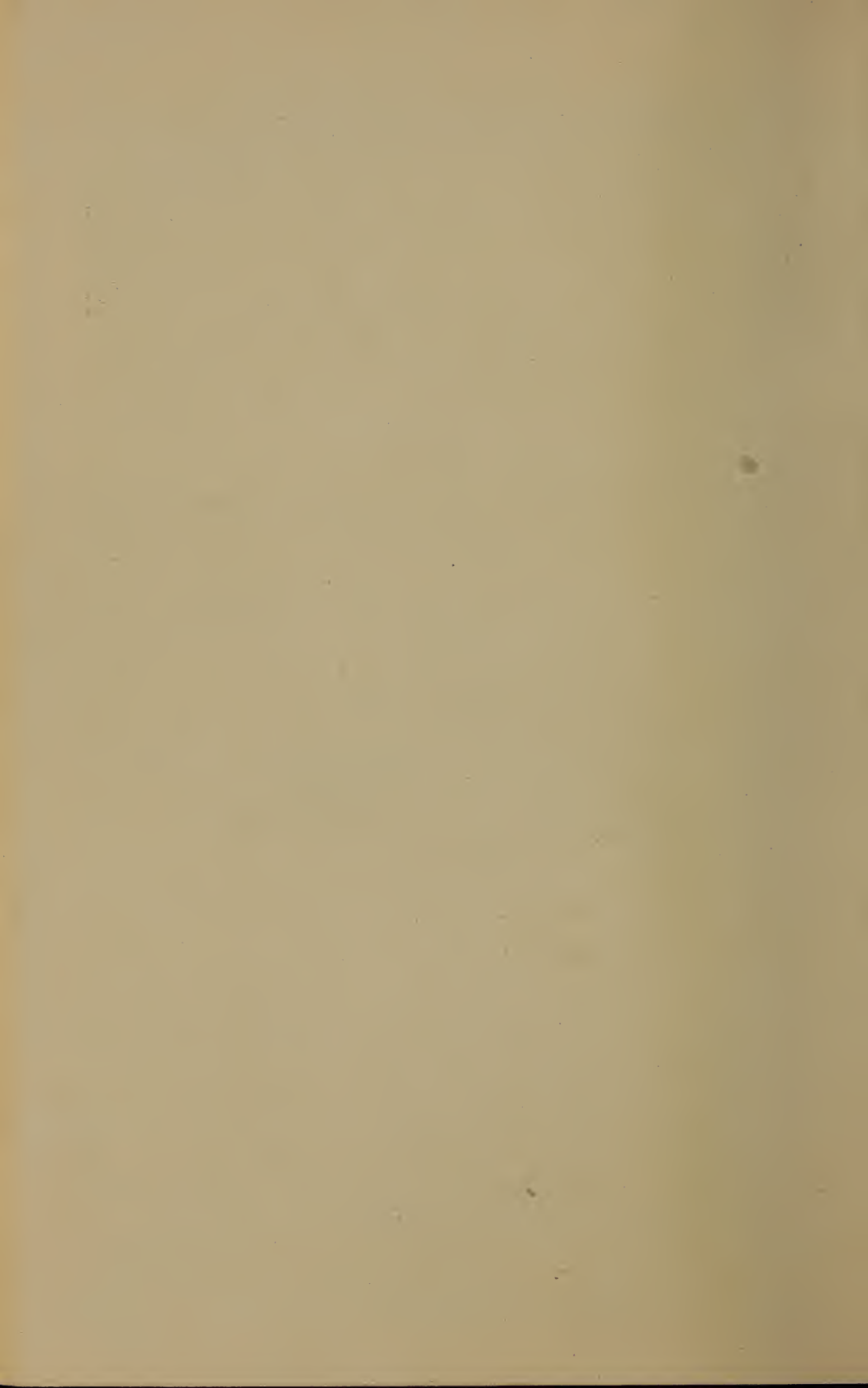
Trimming Tanks are located at the extreme ends of the ship. When the ship is about to be docked these tanks are sometimes filled with sea water in order to cause the ship to float level.

Berth Deck. This deck extends the entire length of the ship and is used for living quarters. On this deck are many mess tables and hammock hooks. The berth deck is also known as the armored or protective deck.

Battle Hatches are made of heavy steel plates



Specialties in the Navy has been brought up to a high standard of efficiency.



which are set over the hatch coamings and securely fastened. Certain hatches are cut out of the armored deck which are quite heavy and are operated by tackles or mechanical power.

Orlop Deck is located below the berth deck. Ammunition hoists and the auxiliary magazines are located there. Ammunition hatches for the intermediate and secondary battery guns open on this deck. This deck is below the water-line and is well protected by the heavy side belts of armor and by the armored deck overhead.

Bulkheads are steel walls dividing the ship into compartments and storerooms. All bulkhead doors and hatches fit snugly against a rubber gasket, making them absolutely water-tight.

Main Engines are those used for propelling the ship. The general type of engine in use is the triple expansion upright type.

Twin Screws pertain to a vessel with two screws or propellers. This type of ships has two separate engines which are located in water-tight compartments below the water-line. All warships, with a few exceptions, are equipped with twin screws.

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Throttle Valve is the valve of a steam engine which regulates the amount of steam entering the steam chest.

Reversing Engine is a small engine used to move the reversing links of the main engine into different positions. When the main engine is to be reversed the steam is shut off and the position of the reversing links changed. This alters the position of the cut-off in the steam chest which causes the engine to revolve in the opposite direction when the throttle valve is opened.

Fire Rooms are located in separate compartments. The steam pipes from the main boilers connect with the main steam pipe which leads the steam to the main engines.

Boilers of the ship are located well below the water-line. The old-style marine boilers contain many tubes through which the heat from the fires passes to heat the water. The new type is known as the water-tube boiler, for the water is inside the tubes; thus steam is created more easily and is of a higher pressure.

Main Shaft is made in sections with solid flanges securely bolted together. This shaft is connected

with the crank shaft of the main engine and extends out through the stern of the ship. The last section, to which the propeller is attached, is known as the tail shaft.

Thrust Bearing. The first section of the main shaft from the engine has several large collars which fit snugly into the thrust bearing, which prevent the shaft from working in or out while the engine is in motion.

Jacking Engine is a small engine that can be connected to the main shaft by cog gear. When in port the jacking engine is used to turn over the main engine for repairs.

Auxiliary Machinery includes the machinery of the ship such as evaporators, ice machines, winches, blower engines, and dynamo engines. When in port only one set of boilers is fired which supplies steam for the auxiliary machinery.

Steering Engine Room is located at the after end of the ship well below the water-line. At sea a watch is stationed in the steering engine room and should anything go wrong it is immediately reported to the officer-of-the-deck. The steering engine is operated by moving the steering wheel on the bridge.

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Wardroom is located aft on the berth deck and is a spacious compartment where the senior officers dine. The admiral and captain also have their quarters located at the extreme after end of the berth deck.

Chain Lockers are located directly under the anchor engine. When the anchors are being hoisted men are stationed in the lockers to stow away the chain, and when they are to be dropped the men are ordered to keep clear of the chain lockers and anchor chains.

Sand Locker is a compartment used for stowing sand. The wooden decks, gratings and boat gear are frequently scrubbed with sand and canvas.

Cat-falls is a large set of tackle used to hoist and secure the anchors. Many ships use a patent anchor, the stock of which is housed in the hawse pipe.

Mooring Swivel. When both anchors are in use the anchor chains are secured to the mooring swivel, which prevents the chains from becoming entangled as the ship swings with the tide.

Chain Plates are wide plates secured to the decks

where the anchor chains pass over, thus protecting the decks. The upper decks are of wood, which is bolted to the steel plating underneath.

Turn Buckle is a metallic device with threads at both ends used to set taut cables and rods.

Boatswain's Chair is a short board with a line fastened at the ends. This chair is used to hoist a person to overhaul the rigging.

Palm is a leather band which fits over the palm of the hand and is used for sewing canvas. A small metal disc is secured to the center of this palm. The head of the sewing needle rests against the disc as the needle is forced through the canvas.

Siren is one of the ship's steam whistles, and when blown it creates a screeching noise.

Keelson is a heavy plating built over the ship's main keel on the inside of the ship's bottom, thus strengthening the keel and bottom of the ship.

Uptake is a section of the boiler which leads the smoke to the smokestack. Many large ships have smokestacks one hundred feet in height from their base.

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Snatch Block is a block hinged on one side. This style of block saves much labor, for by opening the block any part of a rope can be set in. With the old-style block the rope's end had to be reeved through.

Shackle is a link with two eyes at one end. A pin is inserted through these eyes, thus forming a link. Shackles are used to connect chains or cables.

Sextant is an instrument used by the navigator to measure angular distances to ascertain the longitude and latitude. These define the exact location of a ship when at sea.

Stud is a short brace in the center of each anchor-chain link and is used on large chains. The studs give the chain great strength.

Swab consists of canvas threads secured to a handle and is used to mop or dry the decks.

Figurehead is a design fastened to the stem of the ship. The styles of figureheads vary; some consist of a shield, others of the seal of the State after which the ship is named.

Stern Post is an upright piece of metal at the

stern of the ship. The rudder is hinged to the stern post. The extreme opposite end of the ship is known as the stem or bow.

Frames are the steel frames which commence at the keel and curve upward to the extreme heights of the ship. At the different decks, deck beams cross athwartship and are well secured to the frames.

Starboard. In facing toward the bow of the ship, the right-hand side is called the starboard; the left-hand side is known as the port side. Amidship pertains to the middle section of the ship; athwartship signifies across.

DRAINAGE SYSTEM

The ship is one mass of compartments and store-rooms. All minor compartments contain drains which lead the water to the main compartments where it can be pumped out, for the main compartments contain the suction pipes. When water is found in any compartment it is reported to the engine room and is then pumped out. When in tropical waters the ship's lower hull sweats considerably which causes water to form. In the engine and fire rooms are several large pumps with many

suction pipes which lead to these various compartments.

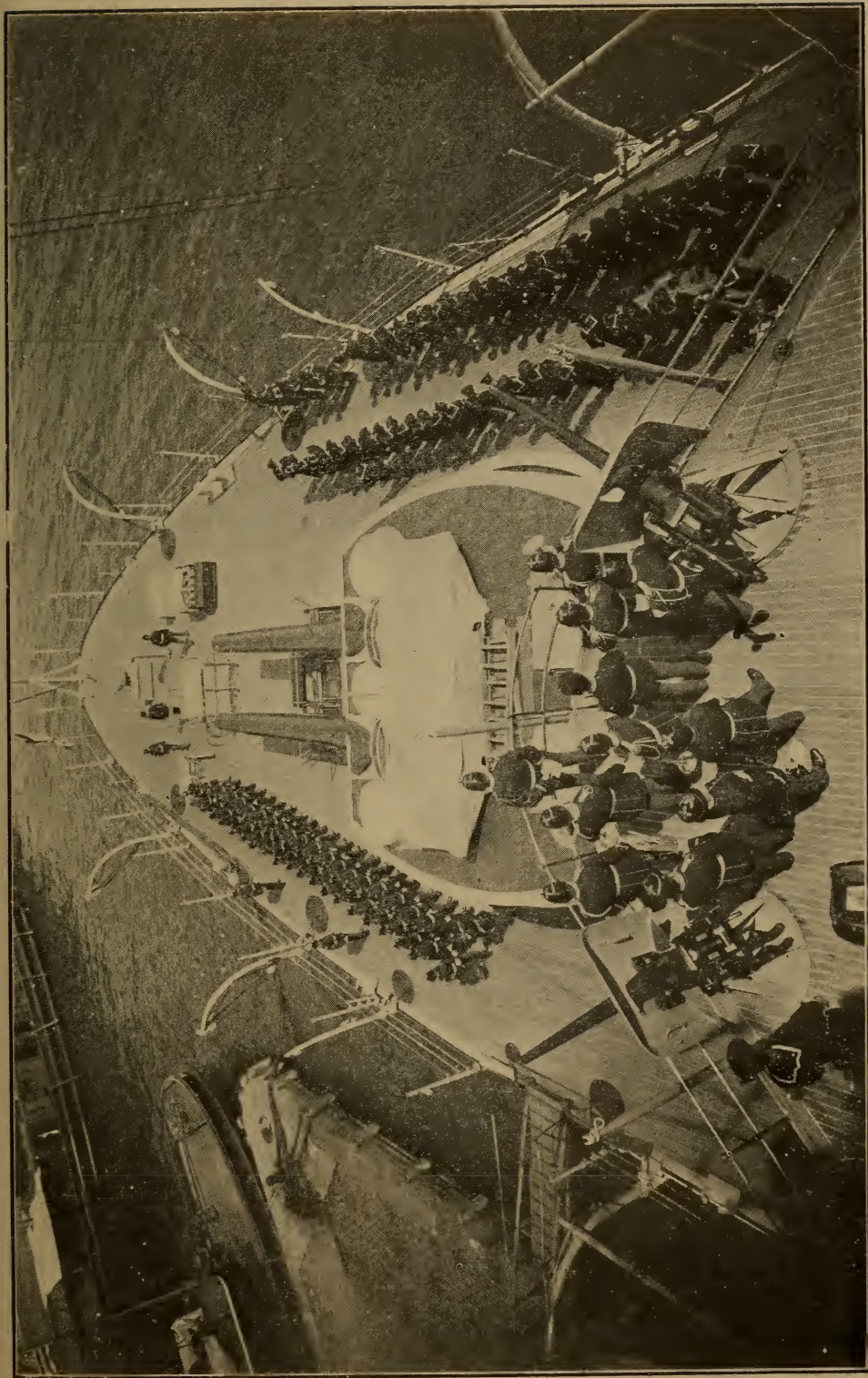
By opening the main sluice gates the water can be led to any compartment desired. The sluice gates and drain valves are operated from the enclosed decks, the stem of each being connected with a long shaft. All these valves are made of heavy brass and are tested regularly. A socket wrench fits over the shaft head, and a dial plate gives the position of the valve, whether open or shut.

The hand pumps can also be connected for pumping out compartments. These pumps are operated by cog gear, and are manned by the crew. They can also be used for pumping sea water for fire extinguishing purposes. There are several hundred drains and sluice valves aboard ship, and to overhaul and test them requires several days' time.

When the ship is being inspected by the admiral and his staff, every nook and corner is thoroughly examined and a report is forwarded to the Navy Department.

VENTILATION SYSTEM

This system is so perfect that all compartments, storerooms and magazines are kept cool and comfortable at all times. In certain parts of the ship



ON THE QUARTERDECK. Sunday morning quarters, when the commanding officer inspects his ship.

Copyright, 1905, by Enrique Muller.

two systems are used; one supplies fresh air and the other takes away the foul air.

Located in different parts of the ship are large blowers which are operated by steam or electrical power, each blower supplying certain sections of the ship with fresh air. Should a compartment or magazine become flooded with water it could not back through the ventilating pipes. Outside the bulkhead is a pocket containing a hollow ball which rises when the pocket fills with water. The pressure from the flooded compartment forces the ball against the aperture in the ventilating pipe, thus preventing water from entering.

In time of action all battle hatches are secured and the large amount of fresh air forced into the lower parts of the ship makes it quite comfortable for the men stationed below decks.

The fire rooms and engine rooms have several large ventilators extending above the upper decks. At the top of each ventilator is a large revolving hood which is kept faced into the wind, causing the heat to be lessened in the engine and fire rooms. When at sea these ventilator hoods are attended to by the watch on deck whenever the course of the ship or wind changes. Should there be no breeze, the hoods are faced forward for the speed of the ship creates quite a draft.

FRESH AND SALT WATER SYSTEMS

A complete distilling plant is installed aboard the ship. Most of the fresh water used is made by the evaporators. Located in different parts of the ship are many fresh water tanks which supply the various pipe lines.

Salt water, which is pumped into the evaporators, comes out sweet and pure for all foreign substances are destroyed by the process of distillation. The fresh water tanks are cleaned and cemented regularly. Several thousand gallons of water is used daily, particularly when at sea.

All exhaust steam from the machinery of the ship discharges into the condensers which contain several hundred small tubes through which salt water in its cold state is circulated and by this means the exhaust steam is condensed. All water thus condensed is filtered and used again for feed water for the boilers. Were it not for this condensing process ships would be unable to make long voyages as the water supply would soon become exhausted.

The salt water that has been used for cooling purposes by the ice machines and evaporators empties into the sanitary tank which is located on the superstructure deck and is used for flushing purposes.

The piping system of the ship is a complicated

affair. Connections are so made that by regulating certain valves the supply can be taken from any system desired.

DESCRIPTION OF UNITED STATES VESSELS

The following six tables give a good description of all vessels of 3,000 tons displacement or over. Only vessels built for warships are included; auxiliary cruisers, supply ships, and colliers being omitted. In time of war battleships and armored cruisers are looked upon as the most important factors, for these craft are capable of steaming any reasonable distance to give battle. Colliers, supply ships and other craft render valuable service by providing coal, ammunition and provisions for the fighting vessels, or performing other important duties.

In time of war, each nation must rely on its own resources to furnish their ships with coal and other supplies. The international neutrality laws forbid warships of either belligerent to remain in a neutral port over forty-eight hours and during this period the ships are allowed to take aboard only enough supplies to enable them to reach the nearest home port. . .

As the monitors are of slow speed, poor sea boats, and incapable of steaming a long distance with their limited coal supply, they are intended and used for

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harbor and coast defense exclusively. No more monitors are being built, for the powerful battleships and armored cruisers have taken their place.

These tables were compiled from the data obtained from the "Annual Report of the Chief of Bureau of Construction and Repair," and have been revised and declared "practically correct in all essentials," by the Bureau.

The data of vessels mentioned may vary from prior data, for they change in minor details from various causes. For example, the contract speed of the armored cruiser Pennsylvania called for twenty-two knots, and the horse-power to be developed at the trial trip was not to be less than 23,000. This vessel made an actual speed of 22.44 knots, and her machinery developed 28,600 horse-power, which greatly exceeded that specified in the contract. The speed and horse-power of a few of the large type of ships pertain to the terms specified in the contract. The length and breadth of the ship, also thickness and disposition of the armor, and many other details remain the same at all times.

The length of the ships is quoted in even feet. For instance, the exact length over all, of the Oregon is 351 ft., 2 in., the Indiana, a sister ship, is 350 ft., 11

in. Both of these vessels are quoted as being 351 ft. in length.

The column marked "Single Discharge" signifies the total weight, in pounds, of the projectiles fired from the main battery of each ship, each gun firing one round. The fighting qualities of a ship, however, cannot be judged by the weight of the projectiles alone, although this represents a very important factor.

A twelve-inch shell weighs 250 lbs. less than a thirteen-inch one; a twelve-inch gun, however, is as powerful and destructive as a thirteen-inch gun. For this reason ships of the new type are equipped with twelve-inch guns. The total number of guns in the secondary battery is given, which also includes the small portable guns that are used by the batalion.

The table entitled "Summary of Vessels Built and Building" gives a good idea of the total strength of the navy. Gunboats under 500 tons displacement and other smaller craft are omitted from this table. Were they included, their data would greatly increase the totals.

Not all the ships mentioned in the following tables are actually in commission at one time. A few may be out of commission temporarily at the various navy

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yards where they are being overhauled. Others may be assigned to the reserve fleet, but most always can be utilized quickly, since the skeleton crews, which consist of a small portion of their regular complement, are kept aboard to keep the ships in order. When a crisis approaches, or at the declaration of war, all available fighting craft assemble as rapidly as possible and form into fleets, squadrons and divisions.

DESCRIPTION OF UNITED STATES VESSELS - BATTLESHIPS BUILT.

January 1, 1909.		Length over all.	Breadth.	Rig and Funnels.	Officers.	Men	Displace- ment (tons) Normal.	Horse-power.	Speed (knots).	Year of Commission.	Main Battery.		No. of guns in secondary battery.	Single dis- charge (lbs.) main battery.	BUILT BY
BATTLESHIPS (First-class).	Name.										In Turrets	Broad- side.			
{	Indiana.....	351	69	1 mast 2 funnels	26	610	10,288	9,607	15.55	1895	4 13-in. 8 8-in.	4 6-in.	25	6,800	Wm. Cramp & Sons, Philadelphia, Pa.
	Oregon.....	351	69	1 mast 2 funnels	35	560	10,288	11,037	16.79	1896	4 13-in. 8 8-in.	4 6-in.	26	6,800	Union Iron Works, San Francisco, Cal.
	Massachusetts	351	69	1 mast 2 funnels	26	560	10,288	10,240	16.21	1896	4 13-in. 8 8-in.	4 6-in.	25	6,800	Wm. Cramp & Sons, Philadelphia, Pa.
{	Iowa.....	362	72	1 mast 2 funnels	35	619	11,346	11,933	17.09	1897	4 12-in. 8 8-in.	4 4-in.	32	5,532	Wm. Cramp & Sons, Philadelphia, Pa.
	Kentucky.....	375	72	2 masts 2 funnels	35	651	11,520	12,179	16.90	1900	4 13-in. 4 8 in	14 5-in.	30	6,100	Newport News S. B. Co. Newport News, Va.
	Kearsarge.....	375	72	2 masts 2 funnels	39	651	11,520	11,788	16.82	1900	4 13-in. 4 8-in.	14 5-in.	20	6,100	Newport News S. B. Co. Newport News, Va.
{	Alabama.....	374	72	2 masts 2 funnels	34	679	11,552	11,207	17.01	1900	4 13-in	14 6-in.	24	5,800	Wm. Cramp & Sons, Philadelphia, Pa.
	Wisconsin....	374	72	2 masts 2 funnels	34	656	11,552	12,452	17.17	1901	4 13-in	14 6-in.	28	5,800	Union Iron Works, San Francisco, Cal.
	Illinois.....	375	72	2 masts 2 funnels	34	656	11,552	12,757	17.45	1901	4 13-in	14 6-in.	24	5,800	Newport News S. B. Co. Newport News, Va.
{	Maine.....	394	72	2 masts 3 funnels	41	772	12,500	15,603	18.00	1902	4 12-in.	16 6-in.	22	5,000	Wm. Cramp & Sons, Philadelphia, Pa.
	Missouri.....	394	72	2 masts 3 funnels	40	739	12,500	15,845	18.15	1903	4 12-in.	16 6-in.	20	5,000	Newport News S. B. Co. Newport News, Va...
	Ohio.....	394	72	2 masts 3 funnels	41	759	12,500	16,220	18.00	1904	4 12-in.	16 6-in.	24	5,000	Union Iron Works, San Francisco, Cal.

N. B.—Brace indicates same type of vessel. In these six pages of tabulated work of "Battleships; Armored Cruisers; Monitors and Protected Cruisers Built," each type is listed respectively according to date of authorization by Congress (with the exception of the second-class battleship *Texas*.) This demonstrates the progress made in warship construction.

DESCRIPTION OF UNITED STATES VESSELS — BATTLESHIPS BUILT — CONTINUED.

January 1, 1909.

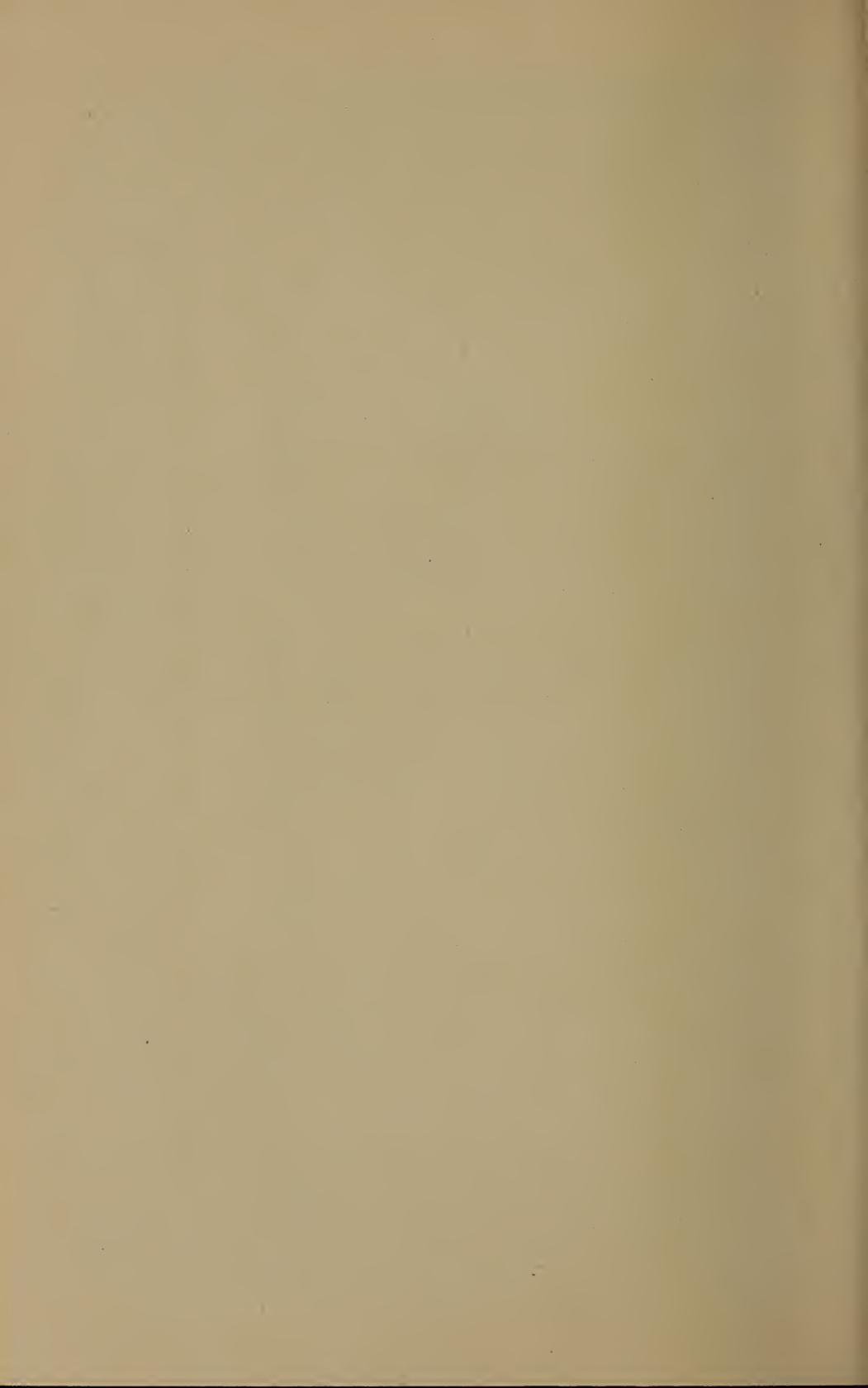
BATTLESHIPS
(First-class).
Name.

Name.	Length over all.	Breadth.	Rig and Funnels.	Officers.	Men.	Displacement (tons).	Horse-power.	Speed (knots).	Year of Commission.	Main Battery.		No. of guns in secondary battery.	Single discharge (lbs.) in main battery.	BUILT BY
										In Turrets.	Broad-side.			
Rhode Island...	441	76	2 masts 3 funnels	40	772	14,948	20,310	19.01	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600	Fore River S. B. Co., Quincy, Mass.
Virginia.....	441	76	2 masts 3 funnels	40	772	14,948	22,841	19.01	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600	Newport News S. B. Co. Newport News, Va.
New Jersey...	441	76	2 masts 3 funnels	40	772	14,948	23,089	19.18	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600	Fore River S. B. Co., Quincy, Mass.
Georgia.....	441	76	2 masts 3 funnels	40	772	14,948	25,088	19.26	1906	4 12-in. 8 8-in.	12 6-in.	34	6,600	Bath Iron Works, Bath, Maine.
Nebraska.....	441	76	2 masts 3 funnels	40	772	14,948	21,283	19.06	1907	4 12-in. 8 8-in.	12 6-in.	34	6,600	Moran Bros., Seattle, Wash.
Louisiana.....	456	77	2 masts 3 funnels	41	840	16,000	20,748	18.82	1906	4 12-in. 8 8-in.	12 7-in.	38	7,380	Newport News S. B. Co. Newport News, Va.
Connecticut...	456	77	2 masts 3 funnels	41	855	16,000	16,500	18.78	1906	4 12-in. 8 8-in.	12 7-in.	44	7,380	U. S. Government, Brooklyn Navy Yard
Vermont.....	456	77	2 masts 3 funnels	41	840	16,000	17,892	18.33	1907	4 12-in. 8 8-in.	12 7-in.	46	7,380	Fore River S. B. Co., Quincy, Mass.
Minnesota.....	456	77	2 masts 3 funnels	41	840	16,000	20,235	18.85	1907	4 12-in. 8 8-in.	12 7-in.	38	7,380	Newport News S. B. Co. Newport News, Va.
Kansas.....	456	77	2 masts 3 funnels	41	809	16,000	19,545	18.09	1907	4 12-in. 8 8-in.	12 7-in.	38	7,380	New York S. B. Co., Camden, N. J.
N. Hampshire.	456	77	2 masts 3 funnels	41	809	16,000	16,500	18.00	1908	4 12-in. 8 8-in.	12 7-in.	38	7,380	New York S. B. Co., Camden, N. J.
Mississippi....	382	77	1 mast 2 funnels	34	673	13,000	10,000	17.00	1908	4 12-in. 8 8-in.	8 7-in.	28	6,720	Wm. Cramp & Sons, Philadelphia, Pa.
Idaho.....	382	77	1 mast 2 funnels	34	673	13,000	10,000	17.00	1908	4 12-in. 8 8-in.	8 7-in.	28	6,720	Wm. Cramp & Sons, Philadelphia, Pa.
Second-class Battleship.														
Texas.....	309	64	2 masts 1 funnel	30	478	6,315	8,507	17.80	1895	2 12-in. 6 6-in.	6 6-in.	22	2,300	U. S. Government, Norfolk Navy Yard.

TOTALS:— 26 battleships; 964 officers; 18,589 men; 340,461 tons displacement; 403,406 horse-power; 163,552 pounds single discharge. — Brace indicates same type of vessel.



OUTWARD BOUND. The U. S. S. *Des Moines* going to sea. The surroundings look quite natural.
Copyright, 1904, by Enrique Muller.



DESCRIPTION OF UNITED STATES VESSELS — ARMORED CRUISERS BUILT.

Name.	Length over all.	Breadth.	Rig and Funnels.	Officers.	Men.	Displace- ment (tons) Normal.	Horse-power.	Speed (knots).	Year of Commission.	Main Battery.		Single dis- charge (lbs.) in main battery.	BUILT BY
										In Turrets.	Broad- side.		
<i>January 1, 1909.</i> ARMORED CRUISERS.													
New York.....	384	65	2 masts 3 funnels	34	525	8,150	17,075	21.00	1893	4 8-in.	10 5-in.	1,500	Wm. Cramp & Sons, Philadelphia, Pa.
Brooklyn.....	403	65	2 masts 3 funnels	41	540	9,215	18,425	21.91	1896	8 8-in.	12 5-in.	2,600	Wm. Cramp & Sons, Philadelphia, Pa.
Colorado.....	504	70	2 masts 4 funnels	41	850	13,680	26,837	22.24	1905	4 8-in.	14 6-in.	2,400	Wm. Cramp & Sons, Philadelphia, Pa.
West Virginia..	504	70	2 masts 4 funnels	41	887	13,680	26,135	22.15	1905	4 8-in.	14 6-in.	2,400	Newport News S. B. Co. Newport News, Va.
Pennsylvania..	504	70	2 masts 4 funnels	41	850	13,680	28,600	22.44	1905	4 8-in.	14 6-in.	2,400	Wm. Cramp & Sons, Philadelphia, Pa.
Maryland.....	504	70	2 masts 4 funnels	41	850	13,680	28,059	22.41	1905	4 8-in.	14 6-in.	2,400	Newport News S. B. Co. Newport News, Va.
California.....	504	70	2 masts 4 funnels	41	791	13,680	29,381	22.20	1907	4 8-in.	14 6-in.	2,400	Union Iron Works, San Francisco, Cal.
South Dakota..	504	70	2 masts 4 funnels	41	791	13,680	28,543	22.24	1908	4 8-in.	14 6-in.	2,400	Union Iron Works, San Francisco, Cal.
Washington....	504	73	2 masts 4 funnels	40	874	14,500	27,152	22.27	1906	4 10-in.	16 6-in.	3,600	New York S. B. Co., Camden, N. J.
Tennessee.....	504	73	2 masts 4 funnels	40	874	14,500	26,963	22.16	1906	4 10-in.	16 6-in.	3,600	Wm. Cramp & Sons, Philadelphia, Pa.
North Carolina	504	73	2 masts 4 funnels	40	789	14,500	23,000	22.00	1908	4 10-in.	16 6-in.	3,600	Newport News S. B. Co. Newport News, Va.
Montana.....	504	73	2 masts 4 funnels	40	789	14,500	23,000	22.00	1908	4 10-in.	16 6-in.	3,600	Newport News S. B. Co. Newport News, Va.

TOTALS:— 12 armored cruisers; 481 officers; 9,410 men; 157,445 tons displacement; 303,170 horse-power; 32,900 pounds single discharge. — Brace indicates same type of vessel.

DESCRIPTION OF UNITED STATES VESSELS — MONITORS BUILT

<i>January 1, 1909.</i>		Length over all.	Breadth.	Rig and Funnels.	Officers.	Men.	Displacement (tons). Normal.	Horse-power.	Speed (knots).	Year of Commission.	Main Battery.		No. of guns in secondary battery.	Single discharge (lbs. main battery).	BUILT BY
Name.	MONITORS.										In Turrets	Broad-side.			
{	Miantomomoh.	263	55	1 mast funnel	16	164	3,990	1,425	10.50	1891	4	10-in.	9	2,000	John Roach, Chester, Pa. and Navy Yard, N. Y.
	Amphitrite.	263	55	1 mast funnel	23	115	3,990	1,600	10.50	1895	4	10-in.	13	2,066	Harlan & Hollingsworth and Navy Yard, Norfolk
	Monadnock.	262	55	1 mast funnel	14	210	3,990	3,000	12.00	1896	4	10-in.	8	2,066	Continental Iron Works and Navy Yard, Mare Is.
	Terror.	263	55	1 mast funnel	14	164	3,990	1,600	10.50	1896	4	10-in.	8	2,132	Wm. Cramp & Sons and Navy Yard, New York.
Monterey.	261	59	1 mast funnel	14	210	4,084	5,104	13.60	1893	2 12-in. 2 10-in.		12	2,700	Union Iron Works, San Francisco, Cal.	
Puritan.	296	60	1 mast funnel	22	248	6,060	3,700	12.40	1896	4 12-in. 6 4-in.		10	3,598	John Roach, Chester, Pa., and Navy Yard, N. Y.	
{	Arkansas.	255	50	1 mast funnel	13	209	3,225	1,739	12.03	1902	2 12-in.	4 4-in.	13	1,832	Newport News S. B. Co., Newport, News, Va.
	Wyoming.	255	50	1 mast funnel	13	209	3,225	2,359	11.80	1902	2 12-in.	4 4-in.	13	1,832	Union Iron Works, San Francisco, Cal.
	Florida.	255	50	1 mast funnel	13	209	3,225	2,336	12.40	1903	2 12-in.	4 4-in.	13	1,832	Lewis Nixon, Elizabethport, N. J.
	Nevada.	255	50	1 mast funnel	13	209	3,225	1,970	13.04	1903	2 12-in.	4 4-in.	13	1,832	Bath Iron Works, Bath, Maine.

TOTALS: — 10 monitors; 155 officers; 1,947 men; 39,004 tons displacement; 24,834 horse-power; 21,890 pounds single discharge. — Brace indicates same type of vessel.

DESCRIPTION OF UNITED STATES VESSELS — PROTECTED CRUISERS BUILT.

<i>January 1, 1909.</i> PROTECTED CRUISERS. Name.	Length over all.	Breadth.	Rig and Funnels.	Officers.	Men	Displace- ment (tons) Normal.	Horse- power.	Speed (knots).	Year of Commis- sion.	Main Battery.	No. of guns in second- ary battery.	Single dis- charge (lbs. main battery.	BUILT BY
{ Atlanta.....	288	42	2 masts 2 funnels	19	285	3,000	3,500	15.60.	1886	2 8-in. 6 6-in.	13	1,100	John Roach & Sons, Chester, Pa.
	288	42	2 masts 2 funnels	22	251	3,000	4,300	15.60	1887	2 8-in. 6 6-in.	13	1,100	John Roach & Sons, Chester, Pa.
{ Chicago.....	342	48	2 masts 2 funnels	32	449	4,500	9,000	18.00	1889	4 8-in. 14 5-in.	14	1,700	John Roach & Sons, Chester, Pa.
	335	49	2 masts 2 funnels	30	360	4,413	8,777	20.10	1890	12 6-in.	21	1,200	Wm. Cramp & Sons, Philadelphia, Pa.
{ San Francisco...	325	49	2 masts 2 funnels	19	323	4,083	9,761	19.52	1890	12 6-in.	16	1,200	Union Iron Works, San Francisco, Cal
	328	49	2 masts 2 funnels	35	360	4,083	8,727	19.00	1891	12 6-in.	21	1,200	Wm. Cramp & Sons, Philadelphia, Pa.
{ Raleigh.....	306	42	2 masts 2 funnels	20	302	3,183	8,500	19.00	1894	11 5-in.	13	550	U. S. Government, Norfolk Navy Yard.
	306	42	1 mast 2 funnels	20	302	3,183	8,290	19.00	1894	11 5-in.	13	550	U. S. Government, New York Navy Yard.
{ Olympia.....	344	53	2 masts 2 funnels	17	282	5,865	17,080	21.69	1895	4 8-in. 10 5-in.	20	1,500	Union Iron Works, San Francisco, Cal.
	{ Columbia.....	413	58	2 masts 4 funnels	28	410	7,350	18,269	22.80	1894	1 8-in. 2 6-in.	19	714	Wm. Cramp & Sons, Philadelphia, Pa.
{ Minneapolis.....		413	58	2 masts 2 funnels	33	410	7,350	20,544	23.07	1894	8 4-in. each	17	714	Wm. Cramp & Sons, Philadelphia, Pa.
{ New Orleans....	354	44	2 masts 2 funnels	19	329	3,430	7,500	20.00	1898	10 5-in.	15	500	} Armstrong, Mitchell & Co., Newcastle-on-Tyne, England.
	{ Albany.....	354	44	2 masts 2 funnels	19	334	3,430	7,400	20.50	1900	10 5-in.	15		500

N. B.—Brace indicates same type of vessel.

DESCRIPTION OF UNITED STATES VESSELS — PROTECTED CRUISERS BUILT
CONTINUED

<i>January 1, 1909.</i>		Length over all.	Breadth.	Rig and Funnels.	Officers.	Men.	Displace- ment (tons).	Horse-power.	Speed (knots).	Year of Commission.	Main Battery.	No. of guns in secondary battery.	Single dis- charge (lbs.) main battery.	BUILT BY
PROTECTED CRUISERS.														
Cleveland	309	44	2 masts 2 funnels	19	320	3,200	4,640	16.45	1903	10 5-in.	15	500	Bath Iron Works, Bath, Maine.	
Tacoma	309	44	2 masts 2 funnels	19	320	3,200	5,288	16.58	1904	10 5-in.	15	500	Union Iron Works, San Francisco, Cal.	
Des Moines	309	44	2 masts 2 funnels	19	320	3,200	5,340	16.65	1904	10 5-in.	15	500	Fore River S. B. Co., Quincy, Mass.	
Denver	309	44	2 masts 2 funnels	19	320	3,200	6,135	16.75	1904	10 5-in.	15	500	Neafe & Levy, Philadelphia, Pa.	
Chattanooga	309	44	2 masts 2 funnels	19	321	3,200	5,303	16.65	1904	10 5-in.	15	500	Crescent Ship Yard, Elizabethport, N. J.	
Galveston	309	44	2 masts 2 funnels	19	321	3,200	5,073	16.41	1905	10 5-in.	15	500	Wm. R. Trigg Co., Richmond, Va.	
Charleston	426	66	2 masts 4 funnels	36	731	9,700	27,200	22.04	1905	14 6-in.	46	1,400	Newport News S. B. Co., Newport News, Va.	
St. Louis	426	66	2 masts 4 funnels	36	627	9,700	27,264	22.13	1906	14 6-in.	46	1,400	Neafe & Levy, Philadelphia, Pa.	
Milwaukee	426	66	2 masts 4 funnels	36	627	9,700	24,166	22.22	1906	14 6-in.	46	1,400	Union Iron Works, San Francisco, Cal.	
Scout Cruisers:														
Chester	423	47	2 masts 4 funnels	16	340	3,750	16,000	24.00	1908	2 5-in. 6 3-in.	.....	184	Bath Iron Works, Bath, Me.
Birmingham	423	47	2 masts 4 funnels	16	340	3,750	16,000	24.00	1908	2 5-in. 6 3-in.	.....	184	Fore River S. B. Co., Quincy, Mass.
Salem	423	47	2 masts 4 funnels	16	340	3,750	16,000	24.00	1908	2 5-in. 6 3-in.	.....	184	Fore River S. B. Co., Quincy, Mass.

TOTALS:— 22 Protected Cruisers and 3 Scout Cruisers; 583 officers; 9,324 men; 116,420 tons displacement; 290,057 horse-power; 20,250 pounds single discharge. — Brace indicates same type of vessel.

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HOW THE NAVY HAS GROWN IN FOURTEEN YEARS.

The following tables demonstrate the growth of the navy covering a period of fourteen years. The first table, dated December 31, 1894, includes all the armored cruisers, monitors, and protected cruisers that were completed up to and including that date. Only vessels of 3,000 tons displacement, or over, are included in these tables. Auxiliary cruisers, gunboats and other less important craft are omitted.

By referring to the weight of projectiles fired from the Delaware type of battleship, it will be seen that it is 6,200 lbs. (or more than three times as much) more than the six protected cruisers of the Cleveland type can fire from their main batteries. The battleship also has many other points of advantage besides that of firing projectiles.

In comparing the expense of operating these six protected cruisers with that of a battleship, it will show a balance greatly in favor of the latter. This fact demonstrates that the battleship is not only the most valuable in war, but is also cheaper in the end.

The aggregate tonnage of these six protected cruisers mentioned in the table "Protected Cruisers, Built," is 19,200 tons; the number of officers required 114; men required 1,922. The tonnage of the Delaware is 20,000. This ship carries a complement of 55 officers and 878 men.

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Prior to 1894, no battleships were in commission. When the second-class battleships Texas and the Maine (old Maine), and the first-class battleships Oregon, Indiana and Massachusetts were commissioned they were regarded a great fighting craft. The fighting qualities of our latest type of battleships, however, greatly exceed the older type in many respects.

The following changes have been made in the tables: The data pertaining to the Maine (old Maine) is included in the tables up to 1898; after this date the data is omitted, for the Maine was lost in the early part of the year of 1898, in the harbor of Havana. The data of the protected cruiser Charleston (old Charleston) is included up to 1900. The Charleston was lost in the Philippines during the year of 1899. The protected cruiser Philadelphia is also included in the tables up to 1902; after this date the data is omitted as the Philadelphia is used as a receiving ship.

Since only vessels on the "Active List" are included in these tables, it would be misleading to include the data of vessels which were lost, or not carried on the "Active List." The older type of ships was rated in a higher class a few years ago. At the present time only battleships and armored cruisers are classed as vessels of the first rate.

Growth of the Navy in 14 Years 149

(Dec. 31, 1894.)

Number and Type of Ships	Displacement (tons) Normal	Officers	Men	Single Discharge (lbs.) Main Battery
1 Armored Cruiser	8,150	34	525	1,500
2 Monitors	8,074	30	374	4,700
11 Protected Cruisers	48,558	288	3,812	11,288
Total, 14 ships	64,782	352	4,711	17,488

(Dec. 31, 1896.)

Number and Type of Ships	Displacement (tons) Normal	Officers	Men	Single Discharge (lbs.) Main Battery
3 First-class Battleships	30,864	87	1,730	20,400
2 Second-class Battleships	12,997	61	821	4,900
2 Armored Cruisers	17,365	75	1,065	4,100
6 Monitors	26,104	103	1,111	14,562
13 Protected Cruisers	58,153	325	4,380	13,828
Total, 26 ships	145,483	651	9,107	57,790

(Dec. 31, 1898.)

Number and Type of Ships	Displacement (tons) Normal	Officers	Men	Single Discharge (lbs.) Main Battery
4 First-class Battleships	42,210	122	2,349	25,932
2 Second-class Battleships	12,997	61	821	4,900
2 Armored Cruisers	17,365	75	1,065	4,100
6 Monitors	26,104	103	1,111	14,562
14 Protected Cruisers	61,583	344	4,709	14,328
Total, 28 ships	160,259	705	10,055	63,822

(Dec. 31, 1900.)

Number and Type of Ships	Displacement (tons) Normal	Officers	Men	Single Discharge (lbs.) Main Battery
7 First-class Battleships	76,802	230	4,328	43,932
1 Second-class Battleship	6,315	30	478	2,300
2 Armored Cruisers	17,365	75	1,065	4,100
6 Monitors	26,104	103	1,111	14,562
15 Protected Cruisers	65,013	363	5,043	14,828
Total, 31 ships	191,599	801	12,025	79,722

150 The American Battleship in Commission

(Dec. 31, 1902.)

Number and Type of Ships	Displacement (tons)	Officers	Men	Single Discharge (lbs.)
	Normal			Main Battery
10 First-class Battleships	112,406	339	6,412	60,532
1 Second-class Battleship	6,315	30	478	2,300
2 Armored Cruisers	17,365	75	1,065	4,100
8 Monitors	32,554	129	1,529	18,226
14 Protected Cruisers	61,283	343	4,757	13,788
Total, 35 ships	229,923	916	14,241	98,946

(Dec. 31, 1904.)

Number and Type of Ships	Displacement (tons)	Officers	Men	Single Discharge (lbs.)
	Normal			Main Battery
12 First-class Battleships	137,406	420	7,910	70,532
1 Second-class Battleship	6,315	30	478	2,300
2 Armored Cruisers	17,365	75	1,065	4,100
10 Monitors	39,004	155	1,947	21,890
18 Protected Cruisers	72,870	408	5,998	15,028
Total, 43 ships	272,960	1,088	17,398	113,850

(Dec. 31, 1906.)

Number and Type of Ships	Displacement (tons)	Officers	Men	Single Discharge (lbs.)
	Normal			Main Battery
18 First-class Battleships	229,198	662	12,693	111,692
1 Second-class Battleship	6,315	30	478	2,300
8 Armored Cruisers	101,085	319	6,250	20,900
10 Monitors	39,004	155	1,947	21,890
22 Protected Cruisers	105,170	535	8,304	19,728
Total, 59 ships	480,772	1,701	29,672	176,510

(Dec. 31, 1908.)

Number and Type of Ships	Displacement (tons)	Officers	Men	Single Discharge (lbs.)
	Normal			Main Battery
25 First-class Battleships	334,146	934	18,109	161,252
1 Second-class Battleship	6,315	30	478	2,300
12 Armored Cruisers	157,445	481	9,410	32,900
10 Monitors	39,004	155	1,947	21,890
22 Protected Cruisers	105,170	535	8,304	19,728
3 Scout Cruisers	11,250	48	1,020	552
Total, 73 ships	653,330	2,183	39,268	238,622



A GALLEY SCENE. The crew's galley, where the ship's cooks prepare the meals for the crew.
Copyright, 1906, by Enrique Muller.

100
100
100
100

GUN POWER U. S. NAVY.—(Jan. 1, 1909, of Warships Built, 3,000 tons Displacement or over.)

No. AND TYPE OF SHIP.	13-in. guns.	12-in. guns.	10-in. guns.	8-in. guns.	7-in. guns.	6-in. guns.	5-in. guns.	4-in. guns.	No. of guns Main Battery.	Aggregate weight (lbs.) single discharge, main battery.	No. of guns Secondary Battery.
26 Battleships	32	70	—	144	88	168	28	4	534	163,552	790
12 Armored Cruisers	—	—	16	36	—	148	22	—	222	32,900	449
10 Monitors	—	14	18	—	—	—	—	30	62	21,890	112
22 Protected Cruisers	—	—	—	14	—	94	126	16	250	19,728	438
3 Scout Cruisers	—	—	—	—	—	—	6	—	6	300	18
Grand Totals.....	32	84	34	194	88	410	182	50	1,074	238,370	1,807

VESSELS UNDER CONSTRUCTION.—(Jan. 1, 1909. Vessels authorized by LXth Congress not included.)

NAME OF BATTLESHIP	Length over all.	Breadth.	Rig and Funnels.	Officers.	Men.	Displacement (tons) Normal.	Horse-power.	Speed (knots).	Contract Date of Completion.	Main Guns.		Single discharge (lbs.) main battery.	BUILT BY
										In Turrets.	Broad-side.		
So. Carolina.	453	80	2 masts 2 funnels	51	818	16,000	16,500	18.50	Dec. 21, 1909	8	12-in.	6,800	Wm. Cramp & Sons, Philadelphia, Pa.
	453	80	2 masts 2 funnels	51	818	16,000	16,500	18.50	Nov. 20, 1909	8	12-in.	6,800	New York S. B. Co., Camden, N. J.
Delaware	519	85	2 masts 2 funnels	55	878	20,000	25,000	21.00	Aug. 6, 1910	10	12-in.	9,200	Newport News S. B. Co. Newport News, Va.
No. Dakota..	519	85	2 masts 2 funnels	55	878	20,000	25,000	21.00	Jun. 21, 1910	10	12-in.	9,200	Fore River S. B. Co., Quincy, Mass.

OLD AND NEW TYPES OF BATTLESHIPS COMPARED

	351	69	35	560	10,288	11,037	16.79	4 13-in.	8 8-in.	4 6-in.	6,800	Union Iron Works, San Francisco, Cal.	
Oregon	519	85	2 masts 2 funnels	55	878	20,000	25,000	21.00	Aug. 6, 1910	10	12-in.	9,200	Newport News S. B. Co. Newport News, Va.

SUMMARY OF VESSELS BUILT AND BUILDING (JAN. 1ST, 1908).

NUMBER AND TYPE OF SHIPS.	Displacement (tons) Normal.]	Horse- power.	Officers.	Men.	Single discharge (lbs.) main battery.
29 First-class Battleships	405,876	477,899	1,146	21,503	193,252
1 Second-class Battleship	6,315	8,507	30	478	2,300
12 Armored Cruisers.....	157,445	303,170	481	9,410	32,900
6 Double-turret Monitors	26,104	16,430	103	1,111	14,562
4 Single-turret Monitors.....	12,900	8,404	52	836	7,328
22 Protected Cruisers	105,170	242,057	535	8,304	19,728
3 Scout Cruisers.....	11,250	48,000	48	1,020	552
3 Unprotected Cruisers.....	6,216	15,687	44	840	1,000
20 Gunboats (over 800 tons displacement)	23,909	32,474	198	3,074	5,038
5 Auxiliary Cruisers.....	28,339	16,000	108	1,149	2,098
21 Torpedo Boat Destroyers	10,195	180,595	68	1,577	—
35 Torpedo Boats	5,707	91,388	67	939	—
12 Submarines	—	—	—	—	—
10 Transports and Supply Ships.....	—	—	—	—	—
17 Naval Colliers....	—	—	—	—	—
1 Hospital Ship.....	—	—	—	—	—
Grand totals.....	799,426	1,440,611	2,880	50,241	278,758

N. B.—Data of the Submarines, Transports, Colliers and the Hospital Ship are omitted. First-class battleships are the most important type of warship when in action. They bear the brunt of the battle owing to the fact that they are well armored and equipped with large caliber guns.

CHAPTER VI

DIFFERENT TYPES OF WARSHIPS—TWO YEARS ON
THE OREGON—HOW A BATTLESHIP IS DOCKED
—ADMIRAL DEWEY'S FLEET AT MANILA
BAY COMPARED WITH A MODERN
BATTLESHIP—HOW THE CREW
IS DIVIDED—NAVAL NOTES

DIFFERENT TYPES OF WARSHIPS (145)

IT is a difficult task to define any set rules regarding the size and type of the different warships.

A man-o'-war is quite deceiving in regard to size and strength. Take, for example, the smaller protected cruisers; gazing at one from a distance, or looking at the photograph of one, she looms up like a battleship or an armored cruiser.

By knowing the displacement, caliber of the guns, and weight of projectiles, one can easily ascertain the ship's power and type. By referring to the "Description of United States Vessels" in this book, the power and type of any ship can be ascertained. This applies only to warships of three thou-

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sand tons or over. The smaller type of vessels is not included, owing to the large number of them. In referring to any type of warship as being ten thousand tons, or any other figures, it signifies that it represents the normal displacement.

In time of battle, battleships and armored cruisers bear the brunt of the engagement; the smaller ships being protected by the larger ones when possible.

The figures, as shown in the description of the different types of warships, apply only to our navy. Many foreign nations, of course, rate ships of a similar size and type in a higher class.

Battleships are from ten thousand tons up, and they, with the armored cruisers, represent the backbone of the navy. Extending the entire length of the ship is a belt of armor which protects her sides. The thickest portion of this belt is along amidships; it then tapers down toward the stem and stern.

The battleship's largest guns are twelve- or thirteen-inch, mounted in turrets, located forward and aft on the center line of the main deck. These guns are mounted in pairs; the turret revolves on top of the barbette, which extends down through the lower decks to the handling room below.

The intermediate guns are four-, five-, six-, or

seven-inch and are mounted in broadsides, and are operated by hand.

The ship has an armored deck which extends her entire length. This deck is three inches thick in some places and protects the ship's vitals. Ships with the best armor, armament, speed, and greatest steaming radius are the most valuable. When one considers the power required to force a sixteen-thousand-ton ship through the water at a speed of eighteen to twenty-one knots or more, an hour, one may wonder how it is possible.

Armored Cruisers average about fourteen thousand tons. Their largest caliber guns are eight- or ten-inch, which are mounted in turrets similar to those of a battleship.

The armor and armament of an armored cruiser are considerably less than that of a battleship. This is due to the fact that the armored cruiser is of great speed and also has a large steaming radius. Armored cruisers are practically battleships except in name.

Monitors are built for coast defense purposes and are kept around home ports. They are seldom sent to sea for long voyages, although the *Monterey* and *Monadnock* made a successful voyage from San Francisco to Manila, a distance of about six thousand miles.

A monitor has very little freeboard, that is, the ship's sides, above the water-line, do not extend very high out of the water. The freeboard is about sixteen inches, and in time of action the flooding tanks can be filled with sea water so that only the turrets and upper works would be exposed to fire.

The largest caliber guns on a monitor are ten- or twelve-inch, which are mounted in pairs, in turrets. Some of the smaller monitors have but a single turret in which two twelve-inch guns are mounted. The speed of a monitor varies from eleven to fourteen knots. A monitor represents half a battleship in appearance, for should another deck be built on top of the monitor's main deck, and be armored on the sides, the vessel would be a regular battleship.

Protected Cruisers can be divided into two classes. Second rate cruisers vary between four and nine thousand tons; third rate cruisers vary between three and four thousand tons. Protected cruisers have less protection and armament than armored cruisers. Their largest caliber guns are eight-inch, some of which are mounted in turrets on the larger type.

This type of ships is of great value for they perform a great deal of scout duty, commerce-destroy-

ing, etc. They have a protective deck, both sides of which slant in order to divert the course of a shell should one strike it. A protective deck performs the same functions as an armored deck; of course, the protective deck is much smaller. The average speed of the protected cruiser is about twenty knots, although several exceed this speed.

Three scout cruisers, the *Chester*, *Birmingham*, and *Salem*, are about to be commissioned. These vessels are capable of making twenty-four knots' speed or over. They also carry a large supply of coal which gives them a large steaming radius.

Two of these vessels are equipped with turbin engines; the *Chester* is equipped with the Parson type; the *Salem* with the Curtis type of turbine, while the *Birmingham* is equipped with the regular reciprocating engines.

These cruisers are of the same type and size and when completed, great interest will be taken in their trial trips. Should the turbin engines prove superior to the old style reciprocating engines, which have been in use for years, the propelling machinery of warships will be changed. Many private steamships, which are equipped with turbine machinery have proved to be quite successful.

Converted Cruisers are steamers which have been engaged in the merchant-marine service. These

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vessels were purchased prior to the war with Spain. Their tonnage varies according to size, but they will average six thousand tons. Their largest caliber guns are six-inch. These vessels serve for various purposes, as they can be used for supply boats, transporting troops, etc.

Some of the foreign nations compel the ship-owners to build their vessels in such a manner that a battery of large caliber guns can be quickly installed. This necessitates extra strengthening of the ship. In time of war these vessels could be quickly converted into cruisers, making a valuable addition to any fleet.

Gunboats vary from one hundred tons to two thousand tons. The expense attached to operating a gunboat is insignificant when compared with that of a large ship. Gunboats and protected cruisers relieve the larger ships from much steaming about. Should trouble be brewing anywhere, these small vessels, or protected cruisers, are sent to investigate, and should the trouble prove to be of a serious nature the entire fleet would soon be in readiness.

Their largest caliber guns are six-inch, which have an armored shield over and around them. Many gunboats have coffer-dams which are hollow compartments filled with cellulose. Should a shell penetrate the ship below the water-line, the water



A FEW MASCOTS. A ship without a mascot is like a sailor with a pipe and no tobacco.

Copyright, 1906, by Enrique Muller.

would cause the cellulose to swell, thus closing the hole. The coal bunkers being filled with coal also act as a protection. Gunboats are of great use in shallow water on account of their light draught.

Torpedo Boats are in two classes. Torpedo boat destroyers are long, narrow vessels about two hundred and fifty feet in length; the regular torpedo boats being about half the size and strength of the destroyers. The construction of all torpedo boats is very light, and their interior contains an enormous amount of machinery.

The destroyers make twenty-eight knots or more, and their tonnage varies between four and five hundred tons. Their horse-power is as high as eight thousand, which is, of course, enormous when compared with their small tonnage. The armament consists of a few three-inch, and six-pounder guns. They are also equipped with several torpedo tubes from which the torpedoes are fired. The destroyers make excellent despatch and patrol boats on account of their great speed.

The secondary battery of all warships is used to repel torpedo boat attacks. When a torpedo boat attempts to torpedo a ship, its movements must be rapid.

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TWO YEARS ON THE OREGON

When a battleship is commissioned and ready for service she is then attached to some fleet or squadron.

Many opportunities are given the enlisted men to go ashore and view the various sights that are to be encountered, particularly in a foreign port.

At the time the *Oregon* was built, she was known as a coast-defense battleship, owing to the fact that she had a small freeboard. In 1898, when the *Oregon* made her famous trip from San Francisco to Cuba, a voyage of about fourteen thousand miles, her reputation as a sea-going ship was firmly established.

The *Oregon* set forth from San Francisco on November 1, 1902, en route to the Asiatic station to join Rear-Admiral Evans's fleet. After leaving Honolulu for Yokohama, the ship encountered a terrific typhoon, which carried away several of her boats and caused considerable damage about the upper decks.

About midnight of November 27, 1902, when the storm was at its worst, an enormous sea swept over the entire ship and crushed in the starboard side of the pilot house. Good seamanship and a good ship came out ahead, for the *Oregon* escaped with a safe hull, for none of the main parts of the ship were seriously damaged.

Upon reaching Yokohama, the ship was ordered to a Japanese shipyard where repairs were made. Upon completion of these repairs, the *Oregon* joined Rear-Admiral Evans's fleet.

The Russian-Japanese war caused all warships to leave and remain away from the ports of both belligerents until peace was declared. It is strictly against the neutrality laws for a warship of any nation to visit or remain in any port of either belligerent while a state of war exists. The *Oregon* would have visited many other ports but for this war.

The following is a complete list, taken from the author's log, of the ports visited by the *Oregon*, covering a period of two years:

ITINERARY CRUISE OF THE OREGON

Departed from	Date of sailing	Length of stay
San Francisco, Cal.	Nov. 1, 1902	1 month, 11 days
Honolulu, H. I.	Nov. 23, 1902	13 days
Yokohama, Japan	Dec. 13, 1902	8 days
Uraga, Japan	Feb. 17, 1903	1 month, 17 days
Yokohama, Japan	Feb. 18, 1903	11 days
Woosung, China	Mar. 14, 1903	17 days
Hong Kong, China	Apr. 4, 1903	17 days
Amoy, China	Apr. 7, 1903	2 days
Yangtse River, China	Apr. 12, 1903	3 days
Nagasaki, Japan	Apr. 17, 1903	3 days
Yokohama, Japan	May 29, 1903	1 month, 9 days
Kobe, Japan	May 31, 1903	Hove to for pilot
Inland Sea, Japan	June 2, 1903	1 day en route

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Departed from	Date of sailing	Length of stay
Cheefoo, China	June 11, 1903	6 days
Taku, China	June 17, 1903	5 days
Cheefoo, China	Sept. 20, 1903	3 months, 2 days
Tsnigtau, China	Sept. 26, 1903	5 days
Nagasaki, Japan	Oct. 20, 1903	22 days
Kobe, Japan	Oct. 27, 1903	5 days
Yokohama, Japan	Nov. 13, 1903	16 days
Yokosuka, Japan	Nov. 18, 1903	5 days
Yokohama, Japan	Dec. 5, 1903	17 days
Honolulu, H. I.	Dec. 29, 1903	13 days
Wake Island	Jan. 6, 1904	$\frac{1}{4}$ day
Guam, L. I.	Jan. 13, 1904	3 days
Cavite, P. I.	Jan. 20, 1904	2 days
Olongapo, P. I.	Feb. 8, 1904	19 days
Target Range, Manila Bay	Feb. 27, 1904	19 days
Cavite, P. I.	May 20, 1904	2 months, 23 days
Hong Kong, China	June 15, 1904	23 days
Cavite, P. I.	June 22, 1904	5 days
Woosung, China	Oct. 27, 1904	4 months

HOW A BATTLESHIP IS DOCKED

Located at the different navy yards are one or more dry docks large enough to accommodate the largest warships.

When practicable, battleships are docked every six months, and as a rule they are never allowed to go without docking longer than nine months. The naval constructor of the navy yard has charge of the docking. The captain is in charge until the bow of his ship crosses the sill of the dock, then the naval constructor takes charge.

All ships carry a set of docking plans which give the exact dimensions of the ship. The dock people set up the blocking according to these plans.

The majority of our battleships are over twelve thousand tons displacement and when one considers the many difficulties to be overcome, he quickly realizes the magnitude of the task of docking. Should one set of blocking be misplaced it would perhaps ruin the ship.

A dry dock is a large excavation in the ground with one end bordering on the sea. The sides and bottom of the dock are built of huge blocks of stone closely fitted and cemented together. The sea end of the dock is called the sill, and is built quite strongly, as the dock gate fits firmly against it. In the center line of the bottom of the dock is a continuous row of blocking, which is of uniform height and is known as the keel blocking, because the keel of the ship rests on it.

Extending out to the sides of the dock are many large timbers well blocked underneath. The bilge blocking is slid over these timbers after the ship has settled on the keel blocking. These bilge blockings are slid under the ship's bilges, thus helping to support the vessel. The bilges pertain to the flat portion of the ship's bottom. Bilge blocking is made in various shapes and sizes, for the bottoms of ships differ in form.

The dock gate resembles a small barge and when placed in position it is filled with water which sinks it and allows the water to be pumped out of the dock. The dock gate contains several gate-valves. Upon opening the valves the water enters the dock and floods it. When the dock is filled, the water in the dock gate is pumped out until the gate floats clear of the sill, and it is then removed to one side in order to allow the ship to enter or leave the dock.

Docking is done at high tide. When the ship's bow enters the dock she is warped into position with the assistance of many hawsers. After the ship enters the dock, the gate is placed in position and submerged. This gate has a large rubber gasket on the inner side and the pressure of the sea without keeps the gate in position, thus forming a water-tight joint. When the gate has been set, and the ship properly placed, the naval constructor signals the pump house to start the pumps.

The pump house contains centrifugal pumps capable of pumping an enormous amount of water. As the water lowers in the dock the ship lowers accordingly until she finally rests on the keel blocks.

Great caution is exercised in placing the ship in the exact position designated, for should she be misplaced in the slightest degree, the blocking would not fit. When the ship rests well on the keel blocks the pumps are temporarily stopped.

The ship is now well shored, and when completed, the pumps are again started. As the water lowers in the dock a small army of men are scraping the sea-growth from the ship's bottom. This marine growth (barnacles, etc.) is removed more easily while wet.

As the water in the dock is lowering, the bilge blocking is slipped under the ship's bilges. After the dock has been pumped out, all necessary repairs are made; sea-valves, suction pipes, rudder, and propellers are thoroughly overhauled.

When the bottom is well cleaned it is then given several coats of paint. The last coat is applied as the dock is being flooded. This last coat of specially prepared paint gives better results when left to harden under water. The invention of a paint which would keep a ship's bottom free of marine growth would bring a fortune to the inventor.

When the ship is ready to be undocked, the valves in the dock gate are opened and the dock is slowly flooded. When a sufficient amount of water has entered, the horizontal shores are knocked adrift, and when the dock fills, the ship floats clear of all blocking on which she was resting. The water in the dock gate is now pumped out until the gate floats clear of the sill, and it is then removed to one side and the ship taken out of the dock.

The vessel is warped out of the dock with large

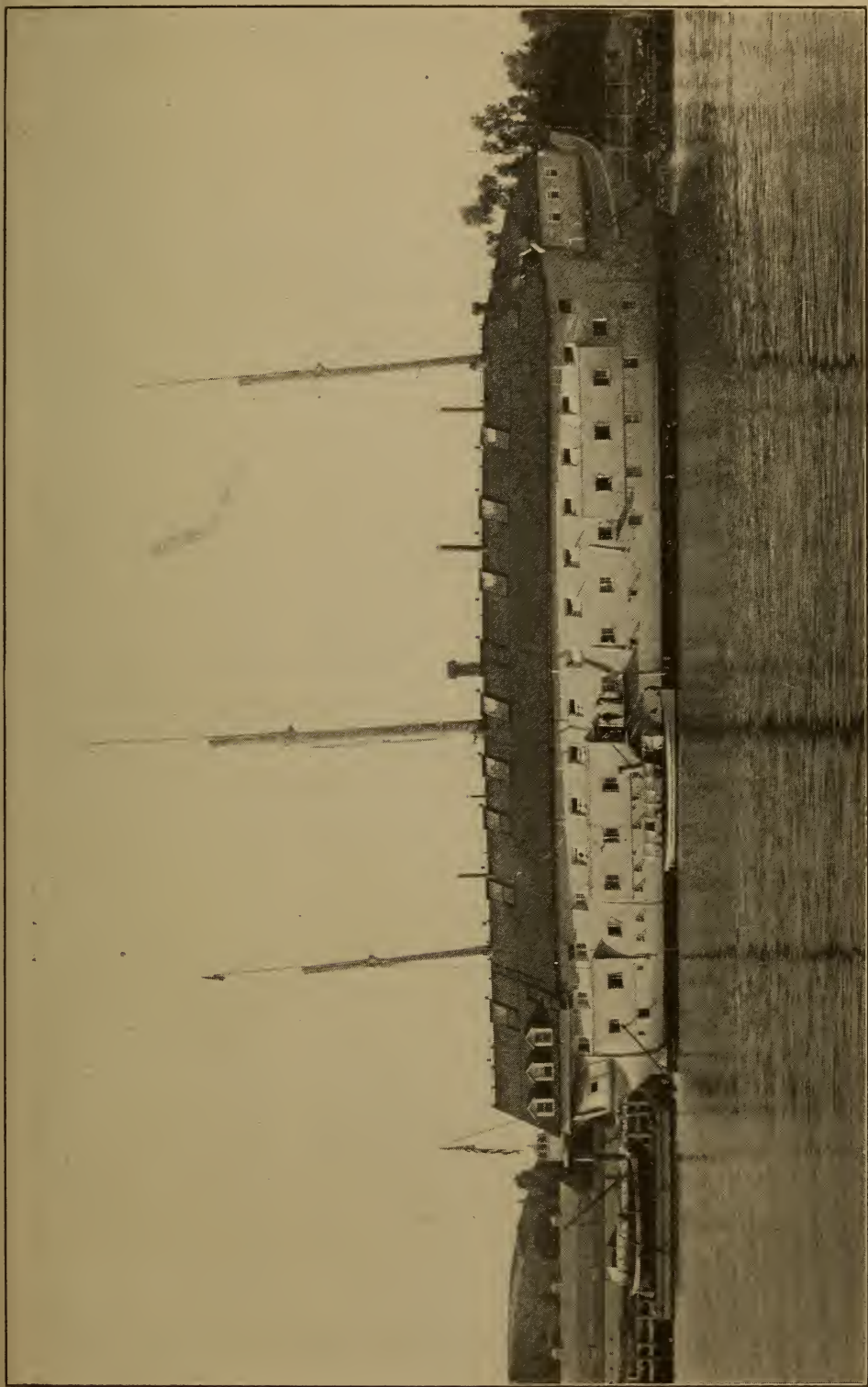
hawsers. Tugs are at hand to tow the ship to her berth; or the ship may have steam up in her main boilers, which would dispense with the services of the tugs.

As the ship leaves the dock the dock gate is again placed in position and sunk, and the dock pumped out. All blocking is then rearranged for the next vessel on the docking list.

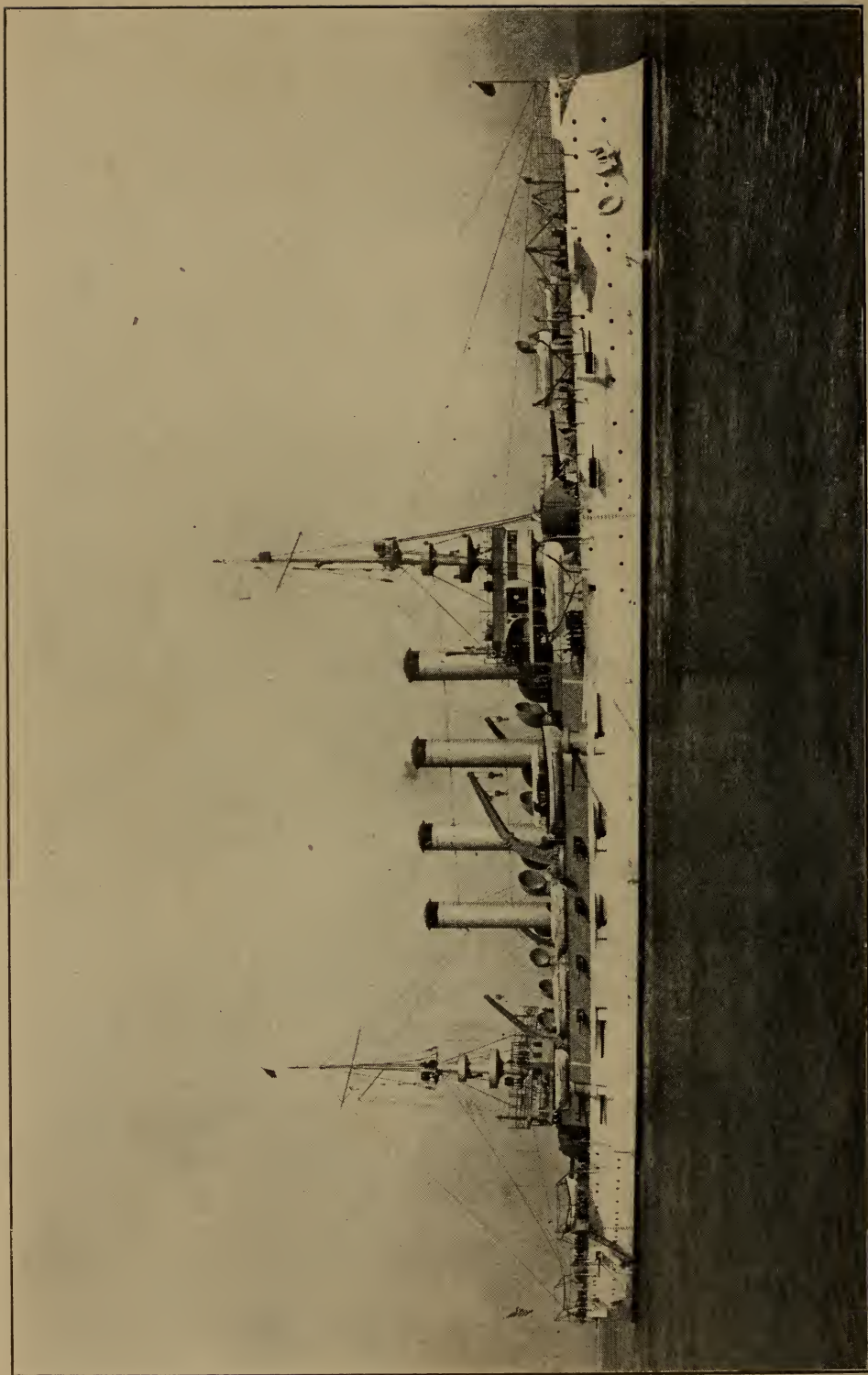
Often two or more small-size ships are docked together. At the navy yards, a large traveling crane travels around the edge of the dock and is of great use in dismounting guns, etc.

The navy has a large floating dock in the Philippine Islands for use by the ships on duty in that vicinity. This dock is of great capacity and is capable of docking the largest cruiser or battleship. This dock is worked on the pontoon principle: the dock is submerged deep enough to allow a ship to enter the docking space; when the ship is in position the flooded pontoons are pumped out until the ship is gradually raised clear of the water, and she is then cleaned and repaired. By reflooding the pontoons the dock quickly settles, and when sunk sufficiently, the ship floats clear.

This dock is so constructed that it is capable of docking itself. The connecting-bolts, which connect the various sections, can be adjusted so that one set of pontoons will raise another set clear of



THE WOODEN NAVY. This ship is the old *Independence*, used as a guardo at Mare Island, Cal.



U. S. S. WEST VIRGINIA AT ANCHOR. This type of armored cruisers is designed after extremely graceful lines.

the water. Upon being cleaned or repaired, these same pontoons are lowered, and utilized to raise others for the same purpose.

The various nations often allow a warship of other nations to be docked in their navy yards. This is done as an act of courtesy, for at times it is inconvenient to dock at a private dockyard, owing to the large number of other ships that may be on the docking list awaiting their turn to be docked.

ADMIRAL DEWEY'S FLEET AT MANILA BAY COMPARED WITH A 20,000-TON BATTLESHIP

The following comparison will give a good idea of the fighting strength of a 20,000-ton battleship compared with an average fleet of smaller size vessels. All of the warships which participated in the battle of Manila Bay have been placed out of commission and were thoroughly overhauled, and a different type and caliber of guns installed.

The data pertaining to Admiral Dewey's fleet refer to 1898. The column marked "single discharge" signifies the total weight of projectiles fired from each ship, each gun of the main battery firing one round. The secondary battery is omitted, as the total weight of projectiles fired would be insignificant. Six-pounder guns are the largest caliber guns in the secondary battery of medium-size ships. Ten

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guns of this caliber would discharge only sixty pounds of metal.

Name	Type	Displacement (Tons)	H.P.	Speed (Knots)	Main Battery	Single Discharge (Lbs.)*
Olympia	Protected Cruiser	5,865	17,080	21.69	{ four 8" ten 5"	1,500
Baltimore	Protected Cruiser	4,413	8,778	20.10	{ four 8" six 6"	1,600
Raleigh	Protected Cruiser	3,183	8,500	19.00	{ ten 5" one 6"	600
Boston	Protected Cruiser	3,000	4,300	15.6	{ two 8" six 6"	1,100
Concord	Gunboat	1,620	3,359	16.8	six 6"	600
Petrel	Gunboat	892	1,008	11.8	four 6"	400
Total, 6 Ships		18,973				5,800

U. S. S. CONNECTICUT

Name	Type	Displacement (Tons)	H.P.	Speed (Knots)	Main Battery	Single Discharge (Lbs.)*
Delaware	Battleship	20,000	25,000	18.10	{ ten 12" four'n 8"	7,380

*Main Battery.

Admiral Dewey's fleet has a displacement of 1,027 tons less than the battleship *Delaware*. The *Delaware* discharges 3,400 pounds more metal in a single discharge than Admiral Dewey's entire fleet.

HOW THE CREW IS DIVIDED

A glance through the various periodicals and newspapers published throughout the country will demonstrate that naval news is always interesting. All of the statements which appear in print, however, are not quite true. For instance: a periodical may refer to some magistrate who has given some incorrigible the choice of joining the navy or being sent to the reform school. An incident of this nature casts reflection on the enlisted personnel of the service; it also creates an unfavorable impression with the general public.

The navy never has been, and never will be, a dumping ground for men who should be in the penitentiary. The reader can judge the truth of this statement by referring to a quotation from "The Bluejacket," a naval magazine published by an enlisted man. The remark in question is as follows: "Every good man brought into the navy is an invitation for an undesirable one to get out."

Occasionally an undesirable person may manage to enlist, but when his true character is discovered he is dishonorably discharged. The naval regulations contain several clauses relating to the discharge of any person who may turn out to be worthless. When a person of this character is "beached" (man-o'-war lingo, meaning dishonorable discharge) he is

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discharged for inaptitude, which, in plain English, means worthlessness. In this manner the navy has but little trouble in ridding the service of all undesirables.

The term "sixteen-dollar-a-month-Jackie" may also appear in print. Regarding this title, there is not a bluejacket in the navy to-day who cares to be called a Jackie, for the term seems repulsive in every respect. There are many other terms used in referring to the enlisted men, such as Jack, sailors, bluejackets, or Jack Tar. Any of these titles is quite appropriate, but the term "Jackie" is entirely out of place.

In regard to the "sixteen-dollar-a-month-Jackie," the author has had the following table compiled which shows in plain figures the average pay of the enlisted men. This list is taken from the U. S. S. *Maryland*, one of our armored cruisers. The monthly pay is figured singly, and collectively. The wage scale is underestimated more than overestimated, because the pay of the extra rates is omitted.

When a person reenlists his pay is greatly increased. Take, for instance, the chief master-at-arms of the *Maryland*: his pay is \$73.50 per month; upon reenlisting he will be granted four months' pay gratis, and \$4.36 per month additional pay, which would cause his pay to average \$83.96 per month throughout the enlistment.

In averaging the pay of the crew it will be seen that each man averages \$30.00 per month. This could refer to the entire navy, as all ships rate a certain allowance of men of each rate, which is regulated by the size and type of the ship.

It should also be taken into consideration that an enlisted man is fed and quartered, all medical attendance is free, and he is furnished with his first outfit of clothing gratis.

The complement of a ship may vary slightly. One ship may have three plumbers aboard, when in reality only two are allowed. The extra plumber would eventually be transferred to some other ship which required a plumber in her complement.

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U. S. S. MARYLAND

<i>Seaman Branch:</i>	Pay per mo. Each	Pay per mo. Collectively
1 Chief Master-at-Arms.....	\$73.50	\$73.50
1 Chief Boatswain's Mate.....	73.50	73.50
1 Chief Gunner's Mate.....	75.50	75.50
2 Chief Quartermasters.....	73.50	147.00
2 Masters-at-Arms, 1st class.....	42.11	84.22
4 Boatswain's Mates, 1st class.....	42.11	168.44
4 Gunner's Mates, 1st class.....	44.11	176.44
2 Turret Captains.....	65.00	130.00
1 Quartermaster, 1st class.....	42.11	42.11
2 Masters-at-Arms, 2d class.....	35.00	70.00
6 Boatswain's Mates, 2d class.....	35.00	210.00
4 Gunner's Mates, 2d class.....	35.00	140.00
1 Quartermaster, 2d class.....	35.00	35.00
3 Masters-at-Arms, 3d class.....	31.36	94.08
15 Coxswains.....	36.36	545.40
5 Gunner's Mates, 3d class.....	33.36	166.80
2 Quartermasters, 3d class.....	31.36	62.72
119 Seamen.....	26.11	3107.09
180 Ordinary Seamen.....	19.00	3420.00
<hr/> 355 Men	Average monthly pay, \$24.81	\$8821.80

Engine-room Force:

6 Chief Machinist's Mates.....	\$72.11	\$432.66
4 Chief Watertenders.....	72.11	288.44
6 Machinist's Mates, 1st class.....	57.11	342.66
2 Boilermakers.....	67.11	134.22
3 Blacksmiths.....	51.36	154.08
2 Coppersmiths.....	56.36	112.72
14 Watertenders, 1st class.....	41.36	579.04
8 Machinist's Mates, 2d class.....	42.75	342.00
14 Oilers.....	39.11	547.54
48 Firemen, 1st class.....	36.36	1745.28
48 Firemen, 2d class.....	30.00	1440.00
107 Coalpassers.....	22.00	2354.00
<hr/> 262 Men	Average monthly pay, \$32.38	\$8472.64

How the Crew is Divided

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Artificers' Branch:

	Pay per mo. Each	Pay per mo. Collectively
2 Chief Electricians (1 wireless)	\$72.11	\$144.22
1 Chief Carpenter's Mate	72.11	72.11
9 Electricians, 1st class (1 wireless)	52.11	468.99
1 Carpenter's Mate, 1st class	42.11	42.11
1 Shipfitter, 1st class	56.36	56.36
1 Painter, 1st class	43.36	43.36
1 Sailmaker's Mate	41.36	41.36
2 Plumbers and Fitters	48.36	96.72
5 Electricians, 2d class (1 wireless)	41.36	206.80
1 Carpenter's Mate, 2d class	36.36	36.36
1 Shipfitter, 2d class	40.00	40.00
1 Painter, 2d class	35.00	35.00
5 Electricians, 3d class (1 wireless)	32.00	160.00
1 Carpenter's Mate, 3d class	32.00	32.00
1 Painter, 3d class	32.00	32.00
2 Shipwrights	25.00	50.00
<hr/>		
35 Men	Average monthly pay, \$44.50	\$1557.39

Special Branch:

5 Chief Yeomen	\$75.47	\$377.35
1 Chief Commissary Steward	75.47	75.47
1 Hospital Steward	61.36	61.36
1 Bandmaster	53.36	53.36
2 Yeomen, 1st class	43.36	86.72
1 First Musician	37.36	37.36
2 Yeomen, 2d class	37.00	74.00
3 Yeomen, 3d class	32.00	96.00
1 Printer	36.36	36.36
2 Hospital Apprentices, 1st class	31.36	62.72
2 Hospital Apprentices, 2d class	20.00	40.00
6 Musicians, 1st class	32.00	192.00
8 Musicians, 2d class	30.00	240.00
2 Buglers	30.00	60.00
<hr/>		
37 Men	Average monthly pay, \$44.50	\$1492.70

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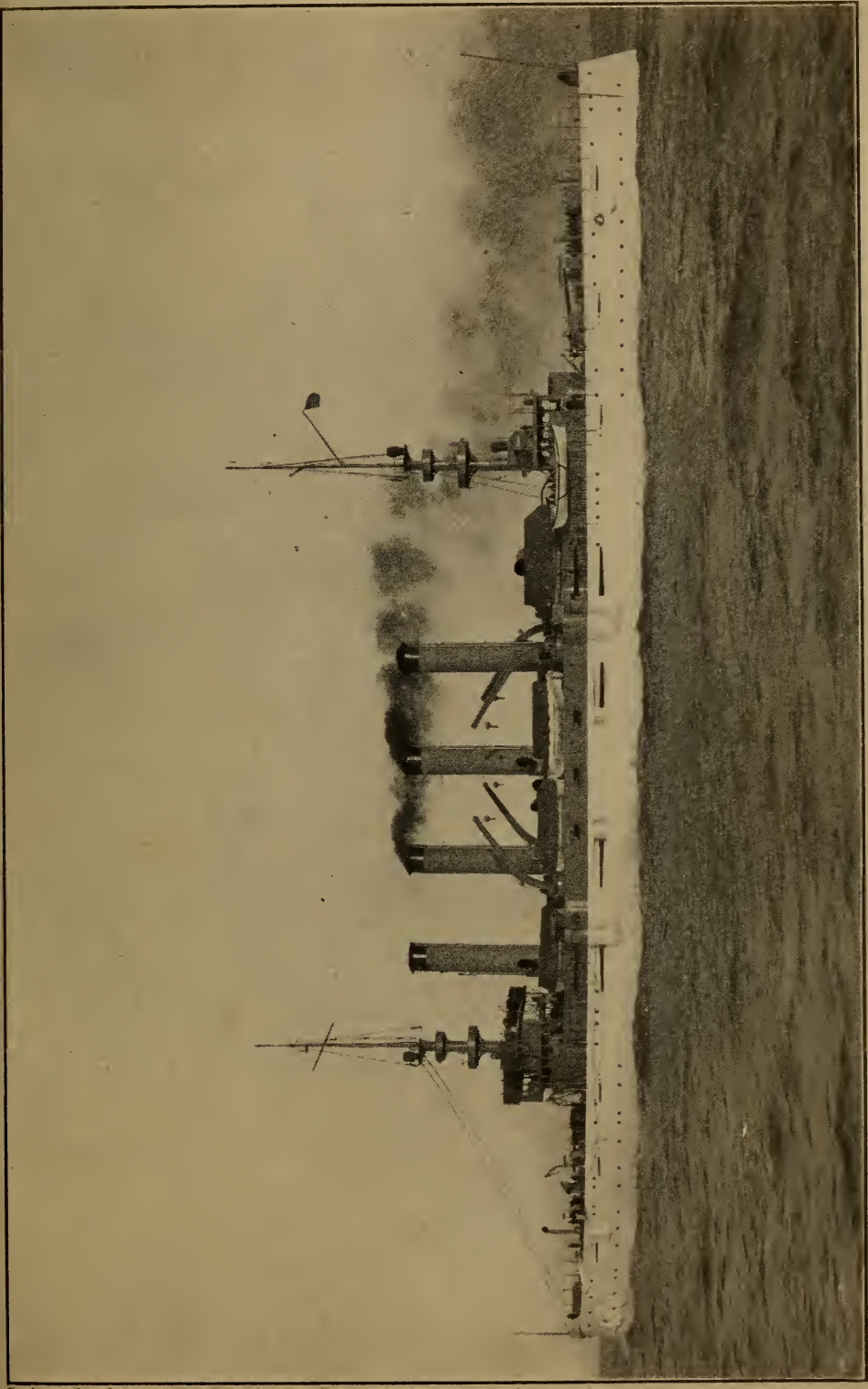
<i>Messmen Branch:</i>	Pay per mo. Each	Pay per mo. Collectively
1 Cabin Steward	\$52.11	\$52.11
1 Cabin Cook	47.11	47.11
1 Wardroom Steward.....	52.11	52.11
1 Wardroom Cook	47.11	47.11
1 Steerage Steward	37.11	37.11
1 Steerage Cook	32.11	32.11
1 Warrant Officers' Steward.....	37.11	37.11
1 Warrant Officers' Cook	32.11	32.11
1 Ship's Cook, 1st class	57.11	57.11
2 Ship's Cooks, 2d class.....	42.11	84.22
4 Ship's Cooks, 3d class.....	32.11	128.44
5 Ship's Cooks, 4th class.....	25.00	125.00
1 Baker, 1st class	47.11	47.11
3 Bakers, 2d class	35.00	105.00
18 Mess Attendants	25.00	450.00
42 Men	Average monthly pay, \$31.75	\$1333.76

GRAND TOTAL

Total number of enlisted men	731
The crew's wages for a month.....	\$21,678.29
The crew's wages for a year	\$260,139.48
Average monthly pay per man	\$29.65
Monthly ration money, at \$9.00 per man . . .	\$6,579.00

NAVAL NOTES

When at anchor, particularly in home ports, warships are accessible to visitors when practicable. Sunday afternoon is generally visiting day, and the visitors flock aboard by the thousands. The visitors are not satisfied until they have explored every nook and corner of the ship. Some would even



U. S. S. CHARLESTON AT SEA. Note how natural the ship is as she steams through the water at half speed.

walk into the captain's cabin to see what kind of breakfast food he used if the orderly did not stop them.

The interior of the ship is all metal, and when it is first painted, a final coat of sticky paint is used. Before this coat dries ground bits of cork are sprayed over it, which prevents the parts so treated from sweating. Only the living quarters are treated with this process. All pipes about the ship are covered with felt or asbestos.

If a recruit was ordered to take the jackasses out of the manger he would think some one was jolly-ing him. Some ships have sections of rubber that fit over the anchor chain links; one end is tapered and when drawn into the hawse pipe they form a tight joint which keeps out the sea water. These sections of rubber are called jackasses. Some of the older type of ships have a partition extending across the hawse pipes; the space in front of this partition is called the manger, and when the order is given "take the jackasses out of the manger," it is strictly regulation.

Among the many illustrations in this book is one of the Naval Y. M. C. A. building at Brooklyn, N. Y. This building cost half a million dollars

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and is for the exclusive use of navy men. Here Jack can "drop anchor" when ashore and feel that he is at home. This building contains several hundred rooms, bowling alleys, roof garden, restaurant, shooting gallery, library, and swimming pool. The place is well patronized and highly appreciated by the enlisted men. There are a number of these institutions throughout this country, and the good they accomplish can hardly be estimated.

Located about the lower decks are several leak-stopper boxes which contain a set of canvas covered plugs of assorted sizes. In time of battle, should a shell penetrate the ship's side, a plug would be quickly inserted and secured with a special clamping device. These stoppers are filled with cellulose, and when wet the cellulose swells, thus closing the hole.

When the ship has reached her anchorage spot the engines are reversed, and when she commences to move astern the anchor is ordered dropped. The leadsman allows the lead to rest on the bottom, and as the ship moves astern, the lead line drags through his hand, and he then cries out to the officer-of-the-deck, "Ship moving astern, sir!" This same method is used during stormy weather to ascertain whether the ship is dragging her anchor.

The temperatures of the magazines are taken daily. All magazines contain thermostats, which are electrical devices for ringing an alarm when the temperature is rising. The alarm bell rings on deck, and by referring to the dial board the exact location can be ascertained. Coal bunkers are also equipped with thermostats.

Officers use the starboard gangway in going to and from the ship; the crew use the port gangway. In returning aboard after taps, in a shore boat, an officer would reply "aye, aye," when hailed from the ship; an enlisted man would reply "hello;" should it be the captain, he would answer the name of the ship. All boats approaching the ship after taps are hailed by the sentries or quartermaster on watch.

When in fleet formation each ship has a speed cone displayed from the signal yard. When hauled all the way up it signifies "engines are going full speed ahead;" when half way, "half speed;" when quarter way, "quarter speed." Should the cone not be displayed, the engines are stopped. Should the engines be reversing, the cone is reversed and hoisted as above. This system enables the admirals and captains of the fleet to keep posted regarding the movements of the ships. Two cones are used

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for twin screw vessels, each indicating the movements of one engine.

Warships carry one or two barbers who hold the rate of ordinary seamen. They charge each member of the crew about fifty cents per month for all tonsorial work needed during that period. The majority of the "hot air" aboard ship originates from the vicinity of the barber shop.

During a big storm oil is sometimes used with good effect to deaden the seas. An oil bag, which is secured with a stout line, is filled with oil and thrown overboard. The continual swashing about causes the oil to ooze out, and when it comes in contact with the water it quickly spreads over a large area, thus helping to deaden the seas.

Members of the crew take great pride in showing visitors about the ship. Nothing offends a bluejacket more than to have a visitor whom he has been conducting about the ship insist on offering money for his services. Some may accept a cigar as an act of courtesy, but nothing more. Should a bluejacket accept any money, and his shipmates learn of the fact, he would get a strong rebuke.

The rate of apprentice is now abolished. First-class apprentices in the service at the time, were

rated seamen, and given a three dollar increase in pay; second-class apprentices were rated ordinary seamen, and given a four dollar increase; third-class apprentices were rated apprentice seamen, and given a seven dollar increase. At the same time, the rate of landsmen was abolished. Landsmen are now enlisted and known as apprentice seamen.

The crew mess at swinging tables. After meals all mess gear is cleaned and restowed, and the tables and benches are secured overhead. At night the hammocks swing under these tables; hence Jack sleeps over where he eats and eats under where he sleeps.

Naval officers, from captain to ensign, wear the following gold stripes on their sleeves: captain, four stripes; commander, three stripes; lieutenant-commander, two and one-half stripes; lieutenant, senior grade, two stripes; lieutenant, junior grade, one and one-half stripes; ensign, one stripe.

When an ex-bluejacket, with an honorable discharge, registers at any navy yard for employment, his name is entered on the eligible list ahead of all others. In taking a Civil Service examination a certain percentage is allowed for an honorable discharge.

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Should a shipmate die, his bag of clothes is sold at auction. Were his folks poor and the crew aware of the fact, the clothes would often net several hundred dollars, and the money derived from the sale is sent to the parents of the deceased.

Uncle Sam's warships are always welcomed in foreign ports. This is due principally to the fact that Jack is well paid and is of a liberal disposition, and spends much money. Merchants of all classes receive a share of it.

When Jack begins to imagine that he is getting tired of sea life he commences to talk about farming, a "chicken ranch" being the favorite theme. Some do start one, but this kind of life soon gets monotonous, and they sell out for whatever price they can get and go to sea again.

The ship's bell is struck every half hour. At four, eight, and twelve o'clock, eight bells are struck. Every half hour after these three periods, the bell is struck, commencing with one bell, until eight bells are reached, it then being four, eight, or twelve o'clock, as the case may be.

During war time the ships are painted a war color, which is a dark green or slate. It is quite

difficult to discern from a distance a ship painted war color.

Should a member of the crew urgently need money before the regular pay day, it can be obtained by applying for a special money requisition, which must be approved by the captain before the money can be drawn.

When a man-o'-war arrives in a foreign port there is a great scramble among the "bumboat" men to come aboard with their wares to sell to the crew. A great mixture of languages is used in buying and selling; should a Chinaman be selling, he would talk "pidgin" English; Jack would reply likewise.

Several of the ship's boats have a gun-mount platform at the bow. In case a landing or boarding party is sent away from the ship, the machine guns are mounted on these platforms.

The larger type of ships is equipped with the wireless telegraph. Electricians are especially trained at the electrical school to make them proficient with the wireless system. This system was of great value during the Russian-Japanese war.

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A hang fire pertains to a loaded gun which has failed to go off after the firing lanyard or trigger has been pulled. Great caution is exercised in opening the breech-plug. On the large caliber guns the breech-plug is not allowed to be opened until several minutes have elapsed.

Smokeless powder is tested regularly, for the gun sights are regulated according to weight and strength of the powder charge used. This powder is sometimes returned to the powder works, where it is reduced, for smokeless powder increases in strength as it grows older.

The lower decks are of steel. Extra heavy linoleum, which is kept well shellaced at all times, is laid on these decks.

Bag inspection is often held. Jack "breaks out" his bag of clothes and takes them to quarters, where his division officer inspects them. All clothes must be strictly regulation, and each member of the crew must have a certain amount of wearing apparel.

The little gunboat *Petrel*, which was with Admiral Dewey's fleet at Manila Bay, is called the "baby battleship." She is under nine hundred



SHIP'S COMPANY, U. S. S. CHITTANOOGA. The crew of a warship know how to form themselves to make a good picture.
Copyright, 1905, by Enrique Muller.

tons displacement. Her main battery consists of four six-inch guns.

Officers and enlisted men salute as they step aboard a warship. Should the officer-of-the-deck be at hand he returns the salute; otherwise Old Glory silently approves.

All "gingerbread work" about the ship, such as the bridge and pilot-house, could be shot away in time of battle and its loss would not impair the ship's usefulness as long as the machinery, magazines, and steering-gear remain intact. Several spare sets of steering-gear are located in different parts of the ship.

Target practice is sometimes held at night. The search lights are trained on the target as the ships speed past it, and the gunpointers aim and fire the guns as though it were day.

When a man deserts from the navy, his nearest of kin are generally notified; also the authorities of his home town. A deserter forfeits his rights of citizenship.

All ships throughout the world carry a set of international signals, which enable them to communicate with each other.

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When a good conduct medal is presented to an enlisted man, he is called to the front at muster, and generally the captain pins it on the owner's breast accompanied by an appropriate remark.

Some of the foreign navies have torpedo booms attached to their ships. These booms consist of a series of poles that can be extended from the sides. A large steel net is attached to the outer ends and protects the ship from torpedo attacks while at anchor. None are in use on our ships, as their usefulness is in doubt.

Warships carry a complete diving outfit to enable divers to examine the rudder, propellers, and strainers. Gunner's mates do the diving, and they are allowed extra pay for this work.

Each ship has a bulletin board, where all information concerning the crew is posted.

When powder is being handled the powder flag is hoisted at the foremast. No one aboard is allowed to smoke during this time.

Many of the large ships carry chaplains, and while services are being held the church flag is hoisted in a conspicuous place.

A mascot in the form of some tame animal is usually carried. The *Kentucky* had a large bear, which would growl when poked in the ribs. When visiting bluejackets came aboard it was great fun to see them pet the bear. Suddenly, one of the crew would poke Bruin in the ribs and he would give an awful roar, and the stranger petting him would run for the rigging.

The use of sulphur matches is forbidden, only safety matches in small boxes being used. Gasoline is also forbidden to be carried aboard ship.

The decks are swept regularly each day. When at sea one would wonder where the dust comes from.

Many foreign navies have a conscript law, which compels their subjects to serve in the navy. All men in the different services of the United States enlist of their own volition, and their pay, clothing, etc., are unequaled.

When a warship enters a foreign port, she fires a salute in honor of the nation to which the port belongs. The salute is returned by the nation saluted. Should a fleet enter the port together, the senior ship does the saluting.

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Should an enlisted man die at sea, his body is sewed in canvas by the sailmaker's mate, and at the feet a heavy weight of iron is attached. The ship is hove to during the burial, and the colors lowered at half mast. Burial services are conducted by the captain or chaplain, and at the conclusion of the services the body is committed to the deep. The firing squad fires three volleys in honor of their departed comrade, and the ship then proceeds on her journey.

The engineer on watch seldom leaves the vicinity of the throttle valve. Should the propeller drop off, or any other accident happen to the machinery, the steam must be shut off promptly in order to prevent a more serious accident.

Slabs of zinc are placed inside the boilers regularly. The corrosive elements of the water attack the zinc first, thus protecting the interior of the boilers. Rudder pivots and strainers on the outer bottom also have small pieces of zinc placed around them to prevent corrosion.

When the feed-water supply for the boilers is getting short it is sometimes mixed with salt water. This is seldom necessary, however, for there are many facilities for making and stowing fresh water.

While forced draft is being used the fire rooms are tightly closed. The blowers discharge the air into the fire rooms, where it makes its exit through the ash pits, up through the furnaces, and out through the smokestacks. This gives the fires an intense draft.

Should a ship with twin screws have her rudder disabled at sea, she could steam into port by steering with her propellers. One screw revolving faster than the other would swing the ship's bow accordingly.

The term "indicated horse-power" signifies the actual horse-power developed at the trial trip. In most instances the horse-power developed exceeds the amount specified in the contract, for an excess of horse-power insures more speed.

Engines and fire rooms are kept neat at all times. Each member of the engineer's department has a station to keep clean. Visitors always admire the neatness displayed in this department.

The ship has reserve coal bunkers which contain a few hundred tons of reserve coal which is not carried on the regular coal account. Should anything happen to the regular supply, the reserve coal would come in handy.

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Each ship is equipped with a powerful anchor engine, which is quite essential, for should the ship run aground or the anchor get stuck in the mud, reserve power would be required for heaving purposes.

Most of the main bearings of the engines contain hollow compartments, which are connected with a system of water pipes. When the engines are in motion running water circulates around these bearings, thus preventing them from becoming too hot. Salt water is used for circulating.

The engineers of a twin screw ship, on watch, try to have both engines make the same number of revolutions. Should one engine revolve faster than the other, it causes the ship's bow to swing in the opposite direction, which makes extra work for the helmsman. This retards the speed of the ship and also works the ship slightly off her course, making it quite dangerous when near shoals, etc.

A midnight lunch is served to the men on watch in the engineer's department. Oatmeal is often put in the ice water, to prevent the men from getting cramps.

An accurate account is kept of all shots fired

from each gun. A rough limit regarding the number of rounds that may be fired from a large caliber gun is placed on each type of gun. When the gun is well built and cared for, this limit is greatly exceeded.

When the ship is about to proceed to sea the large guns are drawn in the full length of their recoil and blocked. The turrets are also keyed to prevent them from rolling.

When a bluejacket is transferred to another ship he is given a station billet, which has marked on it the owner's number and station at drills.

In port an anchor watch, consisting of a few men, is detailed each night to be on duty in case their services are required. Should there be duties to perform in the night the rest of the crew would not be disturbed.

Each warship and officer has a certain number. When signaling or corresponding, this number system facilitates matters.

The ship's compass is near the steering-wheel on the bridge. The helmsman is always careful to have no metallic articles, such as keys or a knife, in

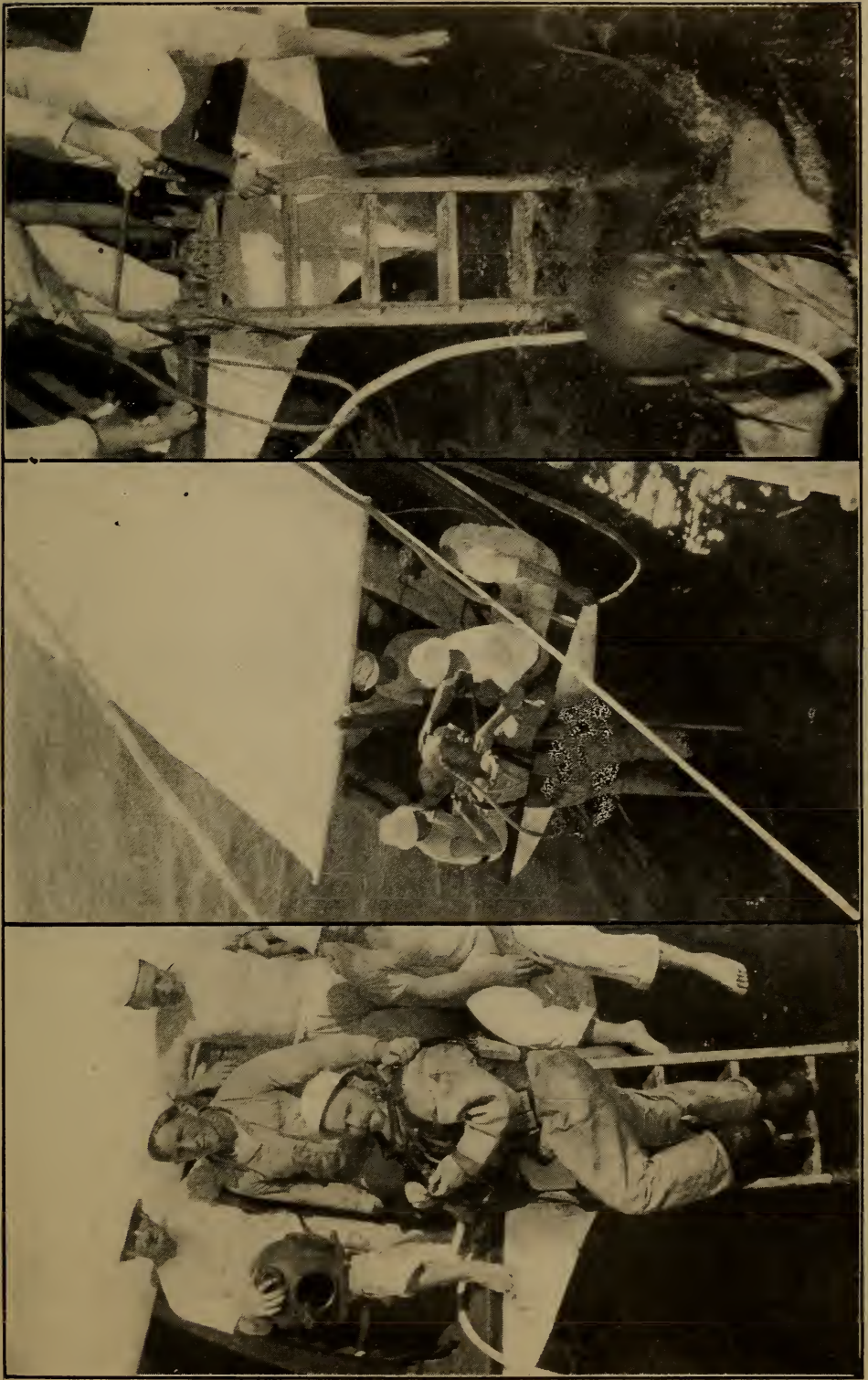
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his pocket, as they would act as magnets and cause the compass to deviate.

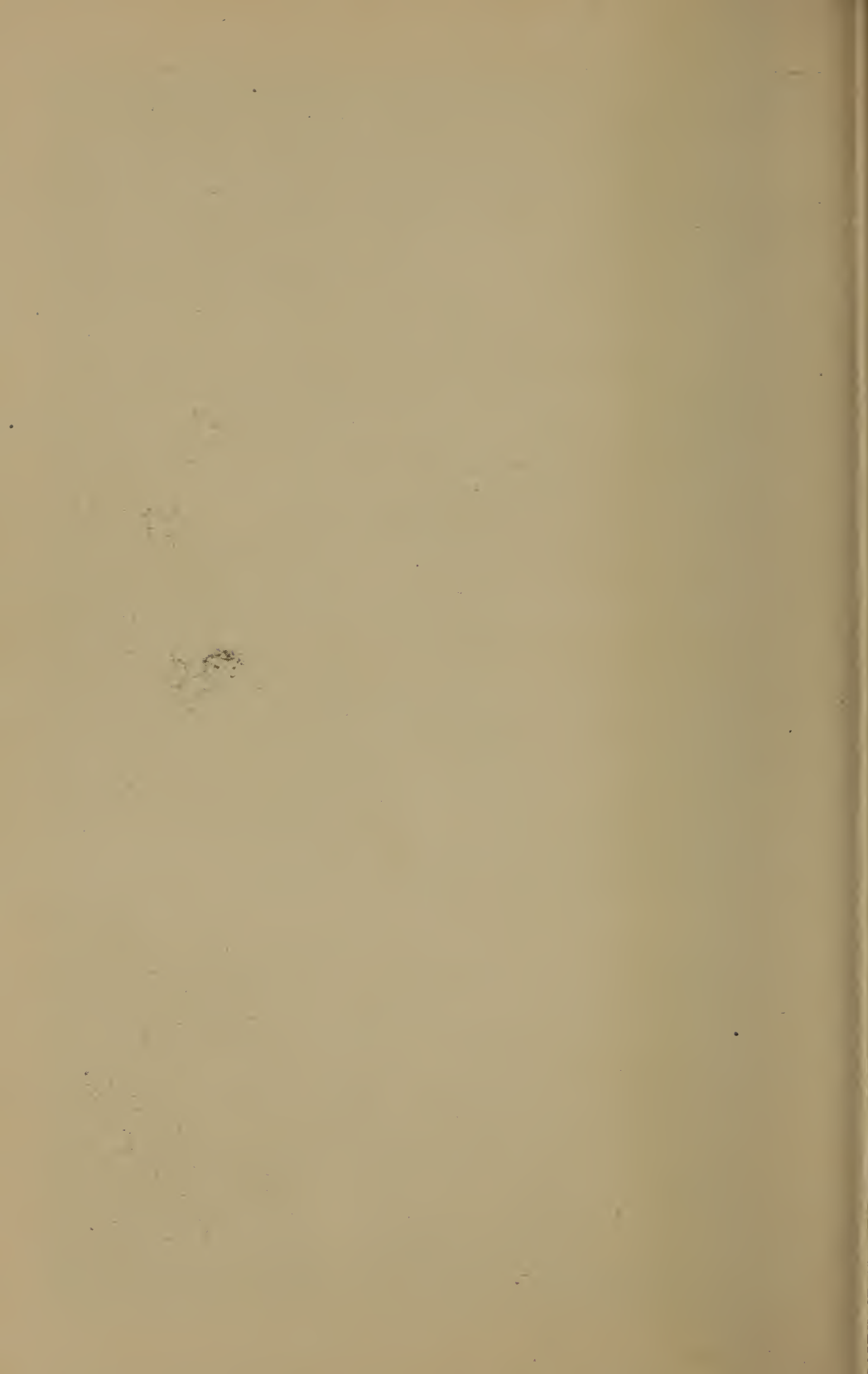
Old rags are seldom cast overboard, for they are useful in shining bright work.

The reading out of the mail aboard ship is quite an important event.

Admiral George Dewey has seen over fifty-three years of naval service.



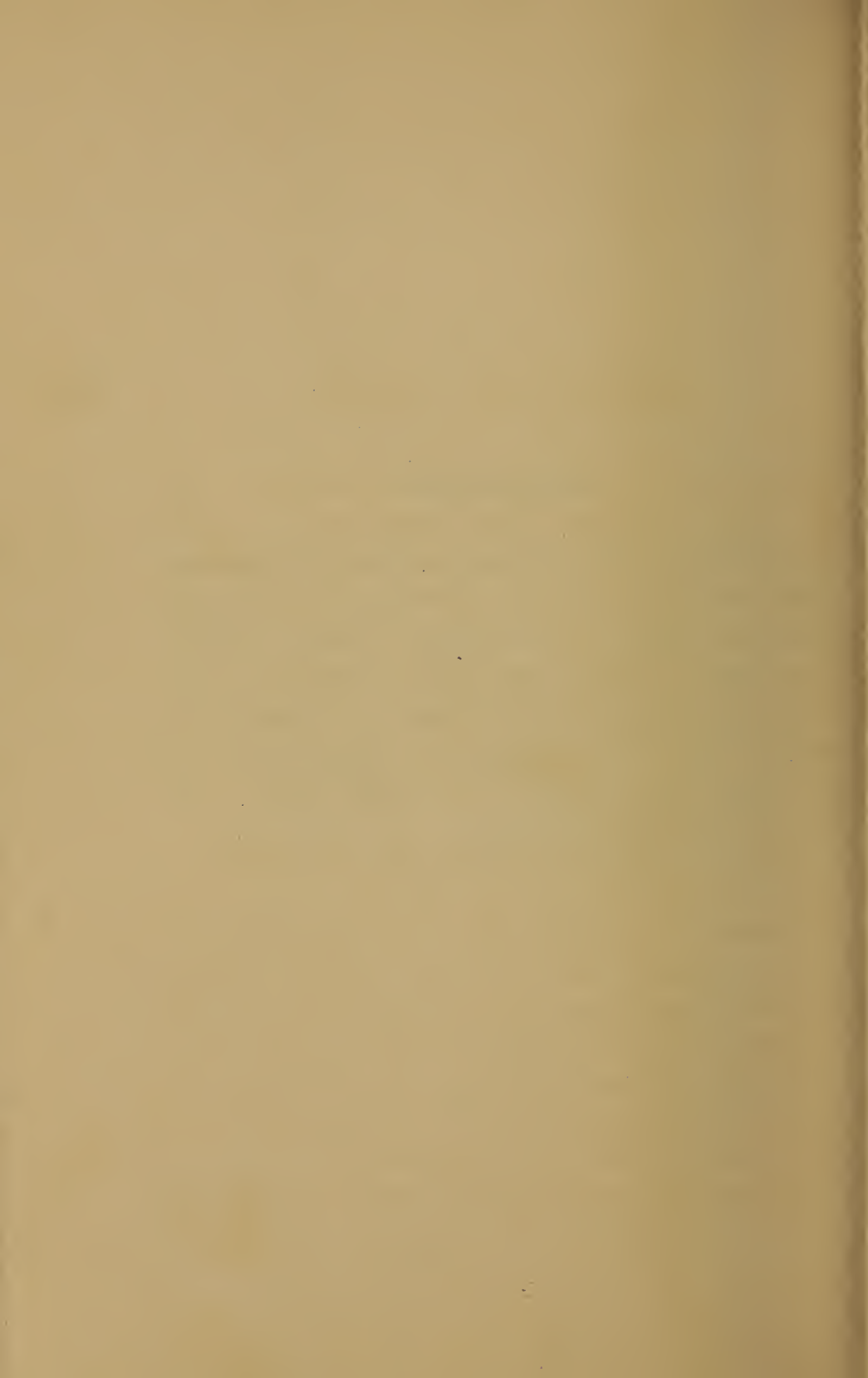
A DIVER AT WORK. This diver is inspecting the ship's rudder, propellers, strainers, etc.



MAN-O'-WAR YARNS

SYNOPSIS

The Wreck of the Yosemite. — Tomorrow is the Day After. — A Sinking Ship. — A Fowl Move. — A Perpetual Reward. — Ingenuity. — A Dry Ship. — Frenzied Finance. — Ah Choy. — Hiram's Letter. — Lost; A Wardroom Cake. — Seagoing Smiles. — How to Tell the Weight of a Porker. — Tell It to a Marine. — A Personal Story. — An Old Salt's Salty Saltings. — A Valuable Curio. — Full Rations. — A Few Salty Riddles. — A Bear Story.



MAN-O'-WAR YARNS

IN traveling about, particularly in foreign ports, one may observe many odd incidents, comical and otherwise. Much knowledge is obtained in various ways, for there is nothing that educates one more than travel. A good idea of human nature is also obtained, because one observes life in its various and complicated phases. In many ports when the ship is at anchor, there are several squalid boats hovering around the ship to pick up the refuse thrown overboard.

Should a whole slice of bread be cast overboard, it is carefully scooped up and laid out to dry. This slice of bread, with others, is taken ashore and sold to people who are unaccustomed to such luxuries. By having personal acquaintance with incidents of this nature, it reminds one of the value of home, and the day when a piece of bread and butter was resented unless it had a quarter-of-an-inch layer of "ma's jam" spread on it.

During the period of my connection with the

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navy (at present, eight years), I have gained much knowledge of the world, which has always proved of great value to me.

The sea is full of mystery, and the longer one follows it, either as a means of livelihood or pleasure, the greater is his knowledge. Life on a man-o'-war is quite safe, owing to the fact that every precaution is taken to prevent accidents.

I consider it quite appropriate to begin my yarns with the story of a shipwreck, which story is only too true. Were it not for the loss of my five ship-mates, I would take more pleasure in relating it.

THE WRECK OF THE U. S. S. YOSEMITE

At the time of this wreck, Guam was a lonesome place, as vessels called there irregularly, and but little was known of the island on account of its location. Transports and other vessels now call there regularly.

Guam is the main island of the Marianas, or Ladrone group, which formerly belonged to Spain. When Magellan, the great explorer, discovered these islands, he landed at Guam to replenish his food and water supply. While there the natives purloined all the iron work they could lay their hands on. For this reason Magellan named the islands the Ladrones.

The island is about thirty miles long and twelve

miles wide. Since the United States has had control it has made great progress.

In 1898, when the *Charleston* was ordered to Manila, Captain Glass, commanding officer of the *Charleston*, was ordered to capture Guam while en route. On entering the harbor the *Charleston* cleared ship for action. Subsequent events, however, proved that the victory was to be a bloodless one. The inhabitants were ignorant of the fact that war existed between the two countries.

Rumor has it that the *Charleston* fired a few shots, and the Governor of Guam, thinking it was a salute, paid an official visit to the ship and tendered his apologies for not being able to return the salute because he was out of powder. When informed that Guam was to be taken in the name of the United States he was greatly dismayed. Final arrangements, however, were made for the surrender. All the Spanish subjects were taken to Manila and furnished transportation to Spain. Meanwhile, one of the natives who could speak English fluently was appointed temporary governor until Captain R. P. Leary arrived. The cruiser *Yosemite* brought Captain Leary to Guam and the ship was ordered to be detained there as station ship.

The *Yosemite* was a converted cruiser of 6000 tons displacement, 3800 horse-power, and her

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battery consisted of six five-inch guns and six six-pounders.

San Luis de Apra is the main harbor, where the ships anchor. Agana, the capital, is seven miles distant. About two-thirds of the population live at Agana, where the palace and marine barracks are located. Running parallel with the harbor is a long continuous reef which acts as a natural breakwater.

On the morning of November 13th, 1900, while the *Yosemite* was at anchor in this harbor, a terrific typhoon arose with such suddenness that the ship was unable to get steam in the main boilers and put to sea. Several of the ship's boats were away at the time and were signaled to return at once. These boats were hoisted and secured with the exception of the steam launch. The wind and sea were now so strong that the launch was unable to approach the ship, and the officer-of-the-deck cried through the megaphone, "Beach the launch anywhere and save your lives." The launch and her crew of five men were lost, for it was ground to pieces by the sharp coral beds.

Our troubles were now beginning in earnest. The ship began to drag over the coral reefs toward Sumay, a small town facing the harbor. By this time steam was up in the main boilers, both anchors were out, and the main engine (she was a single-screw vessel) was going full speed ahead, yet the

ship kept on dragging, and there were several holes soon made in her bottom.

A life-boat was lowered and manned by a volunteer crew; this boat attempted to tow a small line to the beach with which a large hawser was to be hauled ashore. This would enable the crew to rig up a breeches-buoy, thus making it possible to abandon the ship, but the sharp coral reefs soon cut the line and the life-boat was ground to pieces as it neared the beach. Luckily the boat's crew escaped with but slight injuries.

The storm, which still increased in velocity, suddenly shifted its course and caught the *Yosemite* off the starboard beam, forcing the ship out into deep water.

The sick-bay was located on the forward berth deck. Upon reaching deep water the ship settled so rapidly that it was with great difficulty that the patients were removed in time to the wardroom. The ship's mascot, a black goat, happened to be in the sick-bay, but when the last man was removed the water rose with such rapidity that it was impossible to rescue the goat. While the sick were being removed other members of the crew were closing the water-tight doors. Subsequent events proved that the closing of these doors saved the lives of the crew, for they confined the water, thus keeping the ship afloat.

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Before reaching the open sea, the *Yosemite* struck a rock stern first which carried away the rudder, snapped two blades off the propeller, and bent the rudder-shoe (into which the rudder rests) so badly that when the propeller revolved, the good blades would strike so that it could turn no farther.

The ship was finally blown out of the harbor, and how she cleared the narrow entrance and reached the open sea will never be known. Should she have struck the main reef, the ship and her entire crew would have been lost. The wind and sea were terrible to behold; the atmosphere was a mass of spray, and it was impossible to see more than fifty feet ahead. The life boats, vegetable lockers and other gear about the upper decks which had been well secured, were blown bodily off the ship.

At this time there was but little water in the main and after holds, so the ship's stern was high in the air. Bulkheads were braced, bucket lines formed, and in fact everything was done to try and outlive the storm.

No one aboard will ever forget that first night. At times the ship would flounder in the trough of the sea and roll on her very beam ends; then she would stagger as if in doubt whether to come back on an even keel or not. Toward morning both main pumps broke down and the water began to gain rapidly in the main and after holds.

It was a difficult task to overhaul those huge pumps, because the engine room was in a horrible mess. On the upper gratings, over the engine room, were several oil tanks which were bolted to the bulkheads. During the early stages of the storm these tanks broke adrift and their contents were spilled over the pumps, machinery, and ladders below, making it dangerous to move about.

After several hours of toil, the pumps were put in working order again and the water was lowered in the main and after holds. The *Yosemite*, being a converted cruiser, was equipped with only three traverse water-tight bulkheads which were of a flimsy nature. Nothing could be done with the forward hold, as one might as well attempt to pump the ocean dry.

When daylight came we were in a sad predicament; no rudder, the propeller useless, nearly all of the boats blown away, and the ship's back was gradually breaking. To make matters worse there were a large number of man-eating sharks hovering around the ship.

At the foremast a large American flag was displayed with the stars downward. In the navy, when the flag is thus reversed, it signifies distress, while in the merchant-marine service it is a signal for police assistance from shore. Throughout the night, rockets were fired with hopes of attracting help.

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All hands worked with that dogged determination that is never found lacking in the navy, and later events demonstrated that the good work of both officers and crew kept the ship afloat long enough for all hands to be rescued.

During the afternoon of the fourth day one of the lookout cried "Smoke-ho," and all hands rushed on deck in a body to see "Where away?" Sure enough, there was a small steamer hull down on the horizon; she was steaming in the opposite direction, so all of our guns were loaded and fired simultaneously to attract her attention. Our appeal was answered for the steamer shifted her course and came to our rescue. What a welcome sight as she hove to off our starboard beam!

The steamer proved to be the naval collier *Justin*, which was stationed at Guam with the *Yosemite*. At the time of the storm she was well laden with coal, thus only a small portion of the ship was exposed to the wind; as it was, she dragged a long distance and narrowly escaped destruction. Captain Seaton Shroeder, who was governor of Guam at the time, ordered the *Justin* to put to sea and look for us.

The *Justin* now lowered her boats, and tow lines were run from ship to ship, but when a strain was put on them they snapped like twine. The *Yosemite* by this time was settling low in the water.

When it commenced to get dark the word was passed "All hands abandon ship;" this time it was not a drill, it was a reality. The pay clerk, who was acting paymaster, stood at the boat davits and mustered the crew into the boats, and as each man's name was called he stepped forward and slid down the boat falls into the boats. When the boats were filled they were rowed over to the *Justin* where the men were transferred aboard.

When the crew went aboard the *Justin* they lay about the iron decks, with a ring bolt or an anchor-chain link for a pillow and slept like children, for they realized that their troubles were over. The crew abandoned the ship with nothing but the clothes on their backs.

The *Yosemite* remained afloat that night so the *Justin* stood by. Next morning the pay clerk went aboard and saved several thousand Mexican dollars. At three o'clock that afternoon the good ship *Yosemite* went down.

She had been our home and all who witnessed her death struggle will say "It was a sad and solemn sight." The ship began to stagger as though she was going to turn turtle; suddenly she steadied herself, then made three plunges; at the third plunge she failed to recover and kept sinking by the bow until an angle of about forty-five degrees was reached, and then sank.

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The Justin returned to Guam, and the next day we entered the harbor and dropped anchor. A shore boat came off to the ship, bearing the sad news that the steam launch and her crew had been lost.

The day before the storm Guam was a beautiful picture of nature; but now all of the foliage had been turned to a yellowish color by the salt water which had blown over it. Governor Schroeder had much to attend to ashore; several hundred native houses had been blown down, all the Government buildings were more or less damaged and many natives were drowned. All the food crops of the natives were destroyed, and the Government issued rations to them until new crops were planted and harvested and they were again able to care for themselves.

When the Navy Department received the official reports of the wreck they were so pleased and gratified with the bravery and heroism displayed, that an official letter complimenting the officers and crew was forwarded to Guam. Upon its receipt Governor Schroeder read it to the members of the crew who were detained for shore duty.

When a warship is lost through unavoidable circumstances the Navy Department is always gratified to know that the crew is safe. The ship can be replaced with a newer and better one; this cannot be said of the men who lose their lives.

Had the Yosemite been out in the open sea, uncrippled, she would have conquered the typhoon.

TOMORROW IS THE DAY AFTER.

In December, 1903, the battleship and cruiser squadron of the Asiatic Fleet, with Admiral Evans in command, left Yokohama for Honolulu. The fleet was composed of three battleships and four cruisers, the cruisers proceeding in a separate squadron. When we crossed the line (180th meridian) a comical incident occurred. Should you cross the line on Tuesday, enroute from Honolulu to Yokohama, the next day would be Thursday. In returning it is the reverse, for should you cross it on Friday the next day would be Friday also. A full day of twenty-four hours is not gained; the amount of time gained is regulated by the distance traveled. The day of the week is altered to cause the date to fall on the same day of the week on both sides of the line.

I was serving aboard the Oregon at the time, and in front of us were the battleships Wisconsin and Kentucky. The Kentucky, being the flagship, was in the lead. When the squadron crossed the line it was Sunday; naturally the next day was also Sunday. There was considerable work to be done aboard the Oregon at the time, so it was figured out (according to information furnished the crew) that we would not cross the line until Monday, which meant two working

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days. There were two Mondays all right, but only aboard the Oregon, for when we arrived at Honolulu we learned that the other ships had enjoyed two Sundays. We were not out anything, however, as we had the regular Sunday.

A SINKING SHIP.

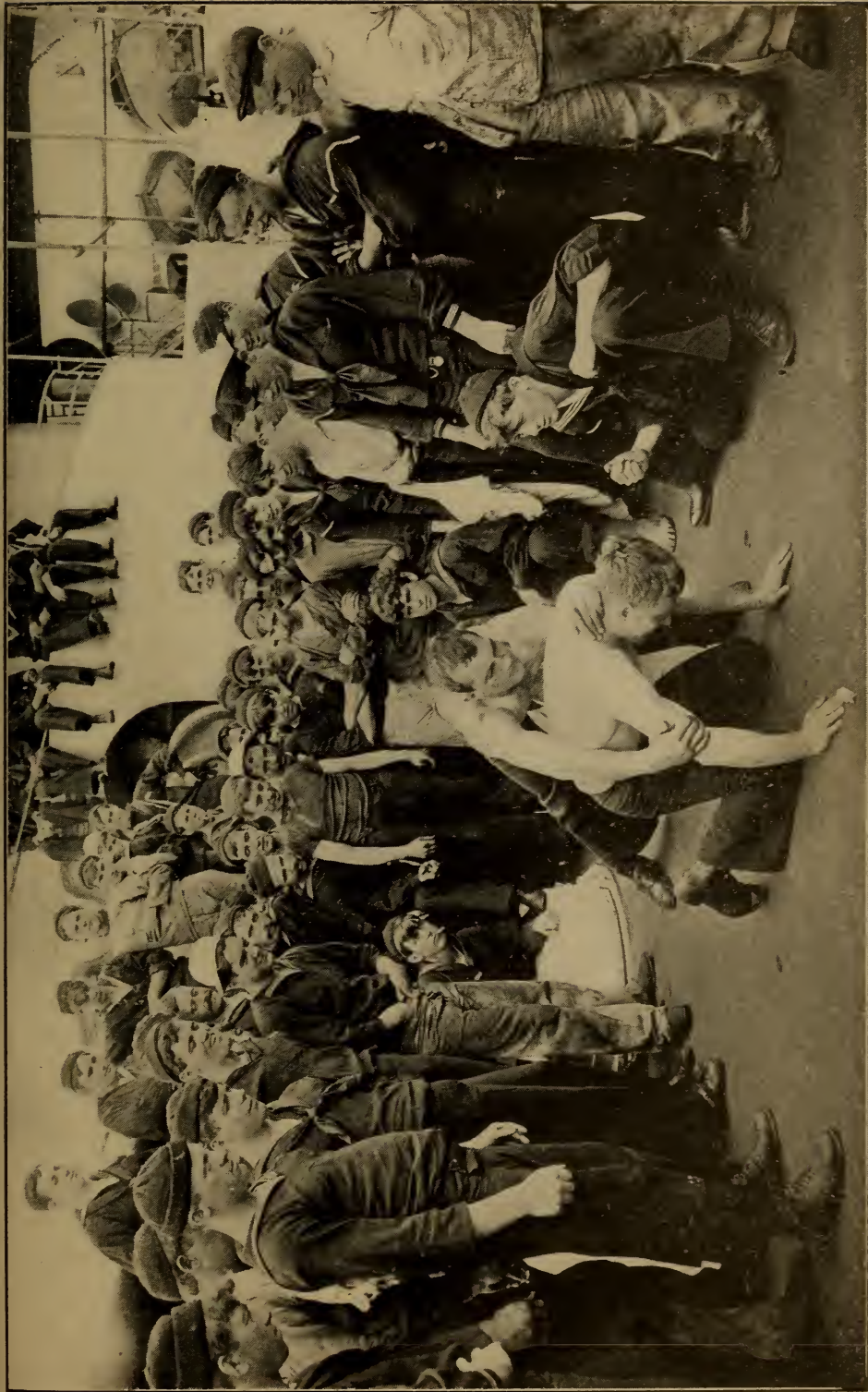
A few years ago when one of our small ships was on duty in Alaskan waters, a peculiar accident happened to one of the coalpassers on watch.

The floors of the coal bunkers of this ship were made of wood and being snugly fitted together were watertight. The ship leaked a little, so the small space between the flooring and the inner bottom of the ship gradually filled with water.

A coalpasser went into the bunker to get out coal for the fires and in trying to break up a large lump of coal with a heavy bar he missed his aim and the bar crashed through the planking, causing the water to spurt up. He thought the bar had gone through the ship's bottom, so he rushed on deck to the Chief Engineer's office and reported the ship sinking. The matter was quickly investigated and it was found that only the confined water had come up through the aperture.

A FOWL MOVE

In 1899, during the Phillipine uprising, the gun-



A WRESTLING-MATCH. Athletic sports of every nature are greatly encouraged by the Navy Department.

Copyright, 1906, by Francis Muller.

boats of the navy were cruising continually, helping to prevent filibustering and assisting the army in landing troops. I was serving aboard the Bennington the greater part of that year. During the latter part of '99 we were ordered to proceed to Lingayen Gulf (located on the West coast of the Island of Luzon) for patrol duty. Lingayen Gulf was more popularly known as "Hungry Man's Gulf" on account of the hard living during this period.

Dagupan, a city located but a short distance from this Gulf, was in the possession of the insurgents, as was the main portion of the rolling stock of the Manila and Dagupan Railroad.

Our orders were to steam two days a week in this vicinity. After being there awhile all delicacies such as sugar, flour and canned vegetables, began to run short, so the principal article left was the regulation hardtack. All ships rate a large drag net and ours was used by the crew in earnest as the fresh-meat boat did no visiting in those days. But few fish were caught because the place was infested with sharks which scare away the small fish. Every one aboard who could produce a fishing line did so, but it seemed to be "If the fish don't bite you don't eat."

During one of our periodical trips in the vicinity we hove to off a small island. It was noticed that several canoes were headed for the ship. When they came

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near we saw that they were loaded with chickens and fruit, and the owners were eagerly requested to come aboard and sell their goods. The wardroom steward was "on deck" first and purchased all the chickens. The queerest part of this transaction was that the poor natives desired old clothes instead of money for their goods and when this fact was learned there was a great scurrying about to scare up old clothes with which to make purchases from the natives. The wardroom officers decided to keep the chickens alive until Sunday, so a temporary chicken coop was rigged on deck and the fowls put into it.

In the forward fire room of the Bennington a conspiracy was formed by the firemen and coalpassers on watch. One dark night about 2:00 A. M., a successful raid was made on the coop. It was only a few minutes work to scald, clean and prepare the ex-wardroom chickens for the grill. A coal shovel was wiped clean and the chickens were carefully laid on it with navy butter spread over them; the shovel was held over the hot coals by willing hands and soon there was a royal chicken feast deep down in the bowels of the ship.

When the wardroom officers discovered their loss they held a preliminary court of inquiry. The verdict was "The chickens yet left in the coop were worth treble the absentees."

A PERPETUAL REWARD.

A certain marine officer when on shore duty in charge of a body of marines had quite an ingenious system for studying human nature. Office hours are held about ten o'clock every morning and all marines on the report for offences committed are brought before the commanding officer to have their cases investigated. As a rule these offences are of a petty nature and when the offenders are brought before the commanding officer they put up the most ingenious defenses ever known. The punishment is generally fatigue duty, which means that the offender must perform extra work about the barracks while the rest of the marines are at leisure. Many old-time marines claim that work is a lost art with them, so extra duty is not welcomed.

The first thing this commanding officer did upon entering his office in the morning was to take out of his pocket book a crisp five dollar bill, straighten out the kinks and lay it on the edge of his desk. One-half of the bill hung over the edge of the desk so that the "V" could be plainly seen and a heavy paper weight was used to secure it.

The court was then in session and as each offender was brought in, the commanding officer pointed to the five dollar bill hanging so conspicuously on his desk and said to the offender, "You see that five dollar bill

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on my desk? Well, that's for the man who can tell me a story I never heard before."

Many a marine had spent a sleepless night scheming up some new yarn, yet the bill remained a permanent fixture. When the commanding officer was told a story that he had never heard he would laugh and exclaim, "Why my good man! I heard that story twenty-five years ago." If the story was an original one the offender generally escaped punishment.

Bill Johnson, the leading boaster of the barracks, often boasted to his chums that he would win the prize. Shortly after pay day Bill became tangled up with some tanglefoot and was locked in the guard house for safe keeping. The next morning, Bill was brought before the commanding officer at the regular time. After being introduced to the "V" and charged with being top heavy, Bill, who was quite a sea-lawyer, put up the following defense:

"We got paid yesterday, sir, and when I came off guard last night I started down town to see the moonlight ascension of Professor Aguadientes' airship. It seems my watch was wrong, sir, as I arrived too late. I then decided to return home, when all of a sudden I was knocked down and I looked up to see what had struck me and there was the airship passing over my head. It seems that some one in the airship was distributing bags of sand on the heads of pedestrians in

order to lighten it. It was my misfortune to be struck with two of them and the second one put me out of commission, for I remembered no more until I woke up this morning in the guard house."

The commanding officer, who had never heard such a plausible story before, gave a few outbursts of laughter and exclaimed, "Why my good man! I heard that story twenty-five years ago; I'll let you go this time but don't do it again."

Bill was in great distress as he thought he had won the prize. Suddenly he was seized with an idea; looking straight into the eyes of the commanding officer he exclaimed, "Airships were not in commission twenty-five years ago."

Bill is the hero of the camp—he won the prize.

INGENUITY

The collier Brutus was manned by a naval crew for a long period. The Brutus, being a collier, did not rate a steam launch. Often the ship lay far off shore and when any one went ashore there was a hard pull ahead for the dinghey's crew. The members of the engineers department converted the ship's dinghey into a steam launch. On board the Brutus was an old Whitehead torpedo engine, and with the help of a large sheet of steel, piping, and other necessary material, a serviceable boiler was manufactured, also a propeller.

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The dinghey was fitted up to receive the machinery and when completed the trial trip took place.

A dinghey is the smallest boat carried aboard ship so the launch's capacity was somewhat limited. At the trial trip the launch could make five knots under forced draft, four knots being the maximum speed under normal conditions.

The launch proved a success since she saved the crew much manual labor. The coxswain of the boat was a ship's company by himself; he was captain, engineer, fireman, and deck hand.

A torpedo engine runs in only one direction, so all eccentrics, valves and reversing levers were missing. When the coxswain, etc., etc., wished to get under way, steam was turned on, the coxswain then leaned over the stern and gave the propeller a turn to start the engine in motion. Upon making a landing great seamanship was displayed because the engine had to be stopped at a certain distance from the landing as it could not be reversed. A small hand pump was used to supply the boiler with feed water.

A DRY SHIP

Characters

Admiral Twostars.

Captain Save'm.

Cabin Steward.

Cabin Boy.

Captain: "Steward, the Admiral is coming to visit me today and as there is no champagne in stock (he never did have any), I've gotten up this little scheme. When I invite the Admiral into the cabin I'll ring the bell and order a nice quart of Mumm's put on ice, you will take the order and return in a couple minutes and reply 'Captain, I'm very sorry to report that we are all out of champagne, there's some nice Pabst beer left.' In reply, I will reprimand you (make believe) for being negligent."

Admiral (who has just arrived aboard): "How-do-you-do, Captain, your ship is looking spick and span. It is quite warm today. Yes, it must be cooler in your cabin."

Captain (invites the Admiral into the cabin): "It is the warmest day I have experienced on this station, Admiral. Why, even the pitch in the deck seams is melting. (Captain rings bell and Steward enters). Steward, put a quart of Mumm's on ice right away, the Admiral's stay is limited."

Steward (entering a couple minutes later): "Captain, I'm very sorry to report that we are just out of champagne; I ordered some yesterday, sir, and it has not arrived aboard yet. There's some nice Pabst beer on ice."

Captain (making a grand stand): "No more champagne left? What became of that case I purchased

two weeks ago? I'm going to disrate you for incompetency; here I have a distinguished guest for company and you make such a report as that? Get out of here and send the cabin boy in."

Admiral (who doesn't tumble): "Oh, that's all right Captain, I would just as soon have a glass of beer, mistakes will happen you know. That reminds me of a little story: When my dad went fishing he always took along a little jug that was marked 'Bait'. One day when dad went to town, I played 'hookey' and went fishing. I took dad's jug along and when I went to bait my hook I found that the jug contained hard cider."

Captain (boy enters as Captain is laughing at joke): "Boy, bring in a couple bottles of beer right away."

(As the Admiral leaves the ship, Captain sighs and murmurs, "I've just saved three dollars.")

FRENZIED FINANCE

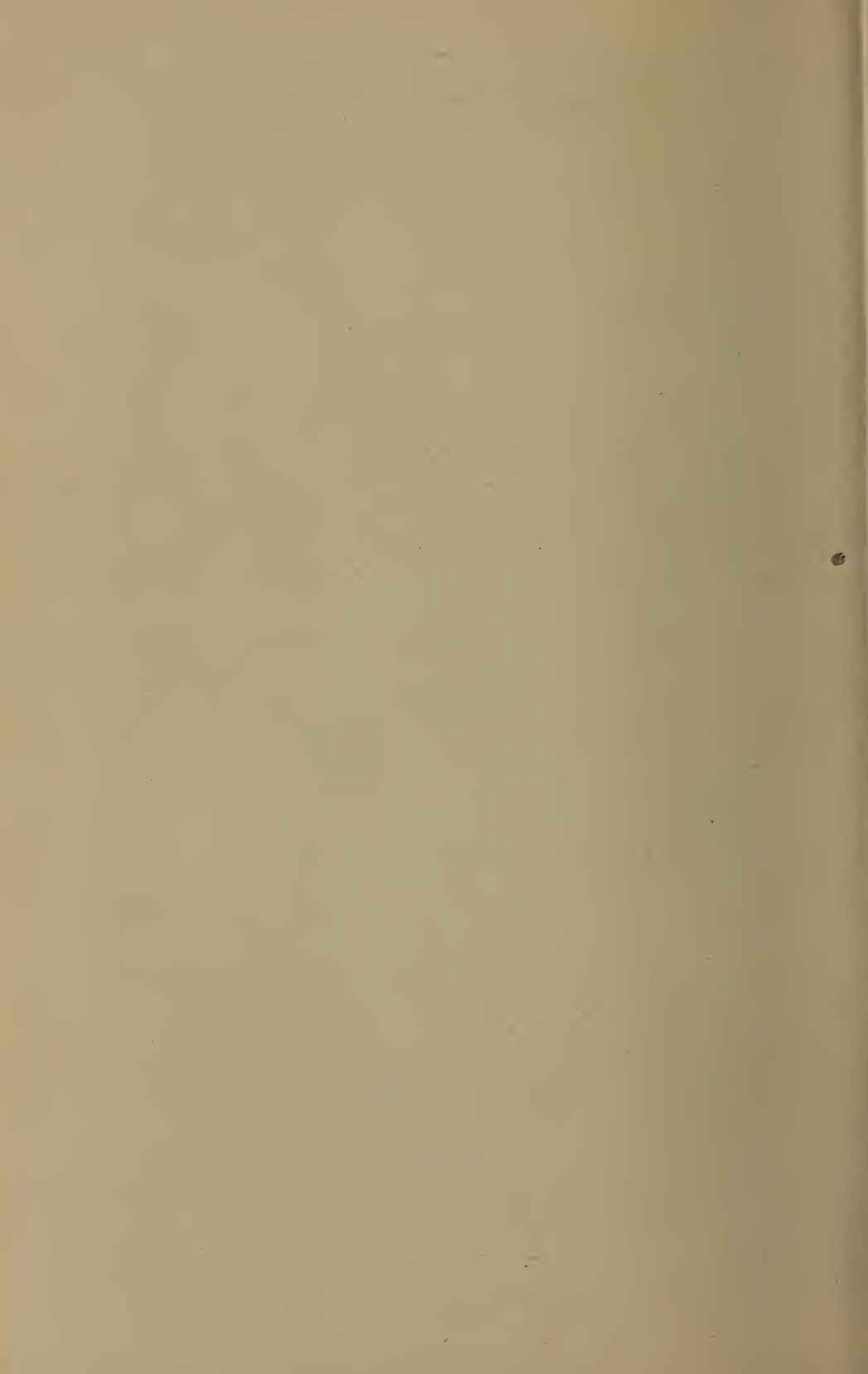
I mentioned in the article entitled Naval Notes that when a sailor begins to imagine he is getting tired of the sea he talks about starting a chicken ranch or a farm. Having had some experience in that line I shall proceed to relate it.

After being shipwrecked on the cruiser Yosemite I was detained ashore at Guam for shore duty. One of the bluejackets there owned a piece of land on a small



Nobody Works but Us, etc. A happy pair snoozing. Bluejackets are very kind to all dumb animals.

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A NEW RACE-HORSE. The new scout cruiser *Albatross*, fitted with turbine engines of high power.

hill which overlooked the town, and as this bluejacket was going home soon he sold the land to me for a nominal sum. I purchased the land with the intention of starting a chicken ranch which I did to my sorrow.

I put the chicken ranch in commission with a complement of sixty chickens and my troubles and misfortunes then commenced in earnest. St. Patrick must have visited Guam, for there are no snakes there, but there are many lizards about three feet in length which are capable of swallowing a young chicken without the least inconvenience.

The lizards acquired the habit of visiting my hen house regularly and sucking every egg they could find. As I was unable to procure glass eggs I had to put up with the lizards.

The hens would become greatly frightened at the appearance of these lizards and ere long they commenced to lay in the brush, which made matters worse. Whenever an egg was laid the rats would eat it, and I thought the hens had quit laying. One of my shipmates advised me to feed them cooked meat which was a great egg producer, so I therefore changed the diet of the chickens.

The paymaster's store rooms wear near my place and whenever any tinned meats were condemned I managed to get some of it to feed my fowls. When the chickens were fed on tinned meats the results were

magical; the hens even laid while they were roosting in the trees at night. Yet the early bird got the worm, for should I be on hand before the lizards or rats I would get my share of the eggs. This state of affairs was too good to last as some kind of chicken disease broke out among my flock and many died. Those that survived quit laying, so I sold the remainder for what I could get and later on, when I returned home, I re-enlisted aboard the Oregon.

About two years after the failure of the chicken ranch, Guam was visited by a terrific earthquake which did considerable damage to the island. Many claim the island rose six inches out of the water as a result of the earthquake.

My shipmates aboard the Oregon used to make fun of the land I owned in Guam by saying that they "would not give seven dollars for the whole Island." I, in return, would demonstrate to them how my land had gone up (in inches) during my absence.

AH CHOY

Ah Choy, mess attendant first-class, had often heard how easy it was to be placed on the sick-list and thereby be excused from all work. One day Ah Choy decided to take a trial. Promptly at 8:30 next morning he reported to the doctor and exclaimed "Me cachee lum-yetism in left legee; alle samee hurtee velly muchee."

The patient was put on the sick-list to enable the doctor to get the run of his case. Ah Choy was in his glory, as three meals a day, with nothing to do, just suited him, so he decided to remain on the sick-list until his enlistment expired.

After enjoying the rest cure for about a week at Uncle Sam's expense, the doctor began to get suspicious, so a close watch was kept on Ah Choy. One day Ah Choy forgot himself and limped on the wrong leg. The next morning the doctor had Ah Choy laid out on the operating table and "broke out" his amputating instruments.

Upon sighting the highly polished knives and saws, Ah Choy turned deathly pale for he felt sure that they were going to amputate his leg. He could stand the suspense no longer so he jumped off the operating table and rushed on deck, crying "You no can cuttee legee." Ah Choy is now a cured man.

HIRAM'S LETTER

Unkle Sam's Battulship Independence,
Oct. 9, nineteen hundred ort ate.

Deer Ma and Pa:

Well I do be a reel sailor at las. Ther doctur at ther reckrutin orfice looked me over right peart an said I wuz cut out to be a sailur. Thoze suspenders that 'Aunt Mirandy sint me be of no ust as weuns do not be allowed to ust them as we ust buttons insted. I askt a

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feller hear whut be ther best fer me to study up fer, an Admiral or Kaptin. He sez that a wize un like me oughter learn to be Kaptin of ther poop deck.

This boat be four storys hi an ther floors are not painted. Gee! Ma, its hard wurk scrubbin thozе floors with san an kanvas. I wuz much scairt las nite fer when I wint to git in mi hammuck I felled out. A feller sez git a hammuck ladder which I did. When I wint to sleap I dreamt Pa's mule wuz chasin me an I felled out an waked up. Ther cook sez if I'll help peal spuds he'll give me sum pie checks.

I nerely broked mi neck yist'dy as I wuz goin up stairs I slipt an I don't ketch ther banister in time so I hit ther floor with a whing. I wuz out in a reel boat the other da an I dident git sea sick one bit. Oh, ma, tell me ther best way to git dirt out uv durty close without washin em; mine gits durty orful eazy.

When I gits to sea I'm gorn to shoot them big guns you hearn tell about. Gee whilikens! youz oughter see one of 'em ripsnorters they be as big as Henry Hawkin's winmill. We don't hev any lamp lites hear like we hev at hoam, all lites hear tun on an orf. I tried to blow one out but a feller sez turn it out an I did. Don't tell enny one I'm gorn to be Kaptin uv ther poop deck as I wanter cum hoam an surprize em.

I'll kloze fer this time, reckonin you all be ther same.

Your lovin son,

HIRAM.

P. S. Ask Mary Brown if she thinks sum moar uv me when I gits to be Kaptin. H.

LOST—A WARDROOM CAKE.

When the armored cruiser New York was on a certain cruise, the wardroom steward made a delicious cake. The ship had been at sea several days so cake was quite a treat. As the cook was somewhat late in making the cake, it was set in the pantry air port to cool.

One of the ship's electricians happened to be repairing a fan in the pantry at the time and the instant he set his eyes on the cake his appetite got the best of his conscience. Repairing the fan as quickly as possible, he went on deck and hunted up his chum who was an A. B. (seaman).

A conspiracy was soon formed with the innocent cake as the "key" to the plot. The wardroom officers do not dine until about 7:00 P. M., so it was quite dark on deck. The two conspirators procured a short line and headed for that part of the ship directly over the pantry air port where the cake was cooling.

A bowline was soon rigged and the A. B. was lowered over the ship's side. As luck would have it, the pantry force was busy with the first course of the evening meal, so it took only a fraction of a minute to capture the cake. Should the line have slipped or broken, the cry of "man overboard" would have been heard.

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A wardroom cake is not to be had every day so the thought of danger was not considered as long as the raid proved a success.

The A. B. took both cake and pan forward and hid them and the conspirators agreed to meet when the mid-watch was called, and eat the cake. When the steward went to get the cake for the dessert it was not to be found. He was so sure that no one had entered the pantry that he at once decided it had rolled overboard. All the steward got for his pains was a rebuke from the wardroom mess officers for being careless in not "securing the cake for sea."

SEAGOING SMILES.

SEAMAN, SIR

Pat (heaving the lead for the first time): "He-e-e-e-haw, h—a—w—he."

Officer (from the bridge): "What's the matter there? Don't you know how to read the lead line yet?"

Pat: "Oi knows the tune of it, sir; bye and bye Oi'll lurn the wurlds."

A NEW HAND

Recruit: "Well, I reckon you can tell me where the ship's cook be at."

Old-timer: "Sure, Johnny, you'll find him down in the forward magazine frying fish."

CHEAP

Bill: "Gee! I'd like to be a pilot, they get three hundred a month."

Pete: "Funny world, this, I always pays a nickel to pilot a schooner across the bar."

DREAMING

Master-at-Arms (waking over-sleeping bluejacket): "Hey there! Wake up, it's after reveille."

Bluejacket (who is dreaming): "I don't want any breakfast, ma."

WELL POSTED

Recruiting officer: "So you would like to enlist as a bandsman?"

Italian Musician: "Yes, sir, me lika."

Recruiting officer: "Who is the greatest man in America?"

Italian Musician: "Gorga da Wash."

Recruiting Officer: "You'll do."

OUT OF COMMISSION

Stormy: "Say, Mike, what must a man be to rate a military funeral?"

Mike: "You got me, I don't know."

Stormy: "He must be dead."

CANNIBALS

Little Child (who has been visiting a warship with its mamma at meal-time): "Oh, mamma!"

Mamma: "What is it dear?"

Little Child: "Ain't it funny, the sailors eat just like we do."

EXTRA STARS

Recruit (to paymaster of flagship): "Why are there fifteen buttons on my trousers?"

Paymaster: "Don't you know Americas first flag contained thirteen stars?"

Recruit: "Where do the extra two come in at?"

Paymaster: "Oh, they represent the stars in the Admiral's flag."

CANTEEN RESTORED

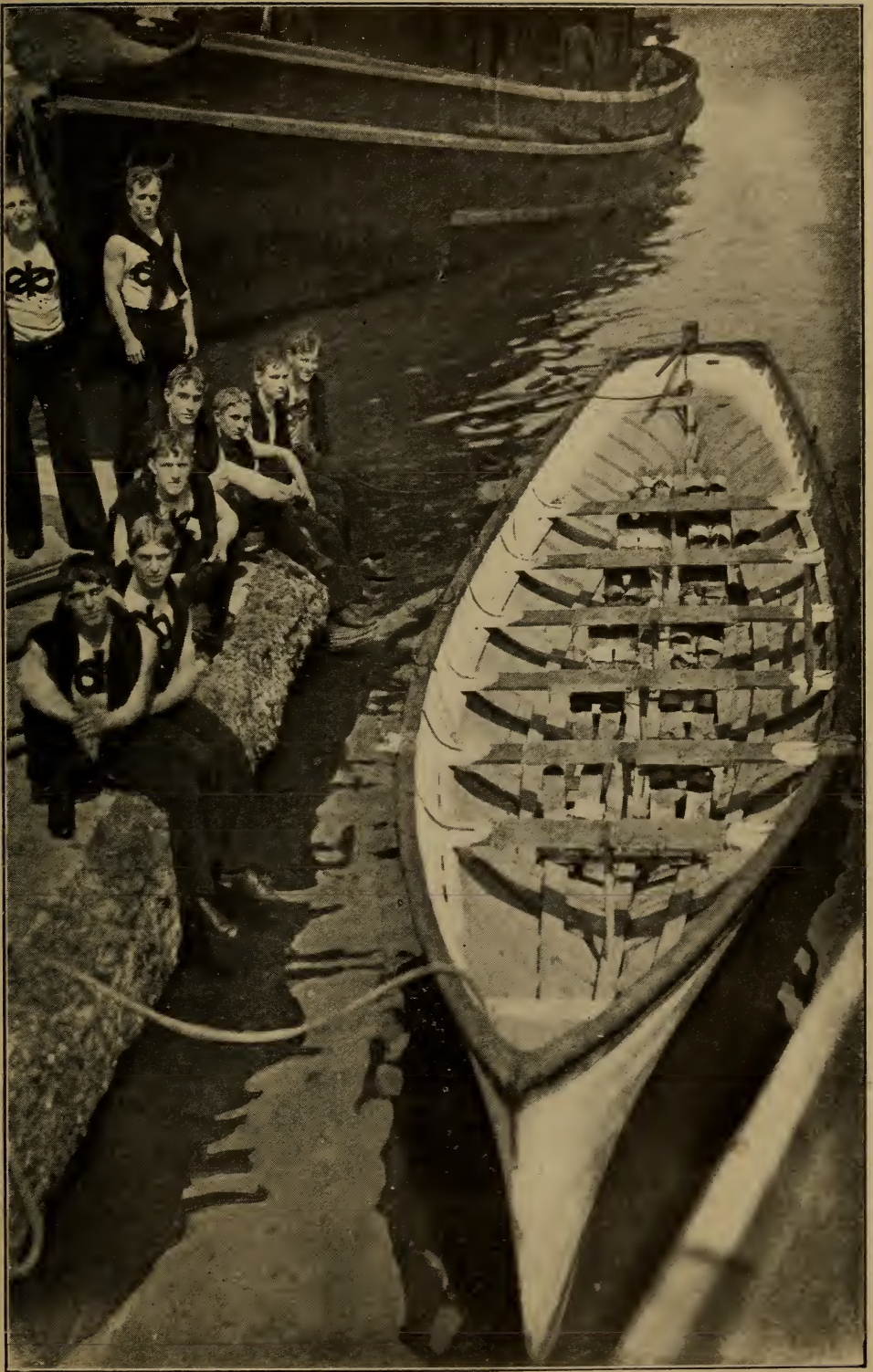
Jack: "Say Bill, what do you think? There's a doctor in Germany who got up a pill that will turn a glass of water into beer."

Bill (greatly excited): "What's his address?"

A DEEP DRAUGHT

Captain (joking Naval Constructor): "I draw twice as much water as you do."

Naval Constructor: "If I put you in dry dock you won't draw any."



RACE-BOAT AND CREW, U. S. S. ILLINOIS. Note the graceful lines of the boat, and the muscles of her crew.

ON DUTY

Foreign Monarch (admiring thirteen-inch guns):
"How do those big guns work, Admiral?"

Admiral: "I could show you better when they are in action."

STORMS AHEAD

Jack (to "Tattooed Jimmy," who is a "short timer" and intends to get married): "Going to reenlist, Jimmy?"

Tattooed Jimmy: "Sure, Jack, on the matrimony sea."

RELIGIOUS

Chaplain: "Your face is not familiar at church my good man."

Unreformed Sailor: "I practice my religion every morning before breakfast."

Chaplain: "I do not understand your meaning."

Unreformed Sailor: "It's me that works the holy-stone on deck."

A LEG BAROMETER

Naval Doctor: "You should not be so anxious for a discharge; your rheumatism is improving wonderfully of late."

Rheumatic Patient: "I've been offered a good billet

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in a weather bureau, sir, and my leg will help me to keep the job."

Naval Doctor: "Very well, I'll recommend you for a discharge."

LIQUID REFRESHMENTS

Old Lady (pointing to Jack's canteen): "What do you carry in that thing?"

Jack: "We carry water in the canteen, ma'am."

Old Lady: "Well I do declare! That must be the canteen question I hear so much about."

MONEYMAKER

Hickey: "Next enlistment, Windy, I'm going to ship over as a baker."

Windy: "You are foolish, you can draw more money than a baker."

Hickey: "A baker makes more dough."

POOR SOUP

Officer (sampling contents of pot): "How dare you issue such soup as that to the crew?"

Ship's Cook (who was about to dump contents into ash-chute): "This is not soup, sir, it is the dish water."

AIRY SAILORS

Submarine Jack: "Say, Willie, Uncle Sam's going

to put submarine and torpedo boat sailors on that new airship that's about to be commissioned."

Torpedo Boat Willie: "I knew that a month ago; I'm studying for a good billet on her."

Submarine Jack: "What you going to be, a ballast shifter?"

Torpedo Boat Willie: "Why, no, I'm studying up to be a sky pilot."

LIGHTNING CALCULATOR

Division Officer (to recruit): "What weight projectile does a six-pounded gun fire?"

Rookie (who is in doubt): "I believe eleven pounds, sir."

Division Officer: "You are wrong. What's the difference between a pound of feathers and a pound of lead?"

Rookie (who tumbles): "A six-pounder gun fires a six-pound shell."

NO TEETH, NO MUSIC

On a certain ship we had an elderly bugler who was very fond of his tea and when on shore leave it was a matter of conjecture as to whether he would return on time. As this ship rated but one bugler his services were in regular demand. To make matters worse, Jack had a set of false teeth and when on liberty, he was in the habit of leaving them ashore and the re-

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sult was that we had no music until the teeth were found or a new set purchased.

Finally things came to such a pass that Jack left his teeth aboard before going ashore, for he figured that a set of teeth in the mouth was worth twenty at the dentist's.

A CONTRABAND VISITOR

Shortly after the battle of Manila Bay the cruiser Baltimore came to Hong Kong to dock and give the crew shore leave, after several months of strenuous duty. Most of the crew were "short timers," so they purchased many curios for the purpose of taking them home. One of the bluejackets returned aboard with a small Chinese dog under his arm. As he stepped aboard, the officer-of-the-deck stopped him, as the regulations do not allow dogs of any kind aboard without special permission.

The sailor did not know what to do, for he was ordered to send the dog ashore. Suddenly he picked up the puppy and took it down the gangway as if he were going to give it to the shore boat-man who had brought him off to the ship. When he was out of the officer's sight he opened his blouse, dropped the puppy in, stepped aboard the ship and walked forward. When he got forward he hid the puppy; a few weeks later we returned to Manila—the puppy went too.

SHOW ME

While one of our battleships was in dry dock a farmer happened to pass by, and having never seen a warship before, he asked a bluejacket what those two windmills (meaning the propellers) were for.

Jack answered, "Why them's fans which keep the rudder cool."

The farmer did not seem quite satisfied with the explanation, so he asked what moved the ship.

"The rudder, of course," replied Jack.

"STAND BY THE PIC."

While the Oregon lay at anchor off Yokohama, Japan, a few months before the Russian-Japanese war, we had a drill known as abandon ship. When the word is passed "All hands abandon ship," each member of the crew performs his allotted duty. Provisions, water, etc., are brought to the boats and the men detailed to them muster in front of their respective boat.

There was an Italian bandsman aboard named Joe, who played the piccolo, and during the drill he seemed bewildered, as he wandered about with the piccolo in his hand. His division officer noticed him and inquired what his duties were when abandoning ship. Joe seemed to understand his duties quite well for he answered, "Me stand by the pic."

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HOW TO TELL THE WEIGHT OF A PORKER

After the wreck of the Yosemite the crew, which were saved, were brought back to Guam and sent to Agana, the capitol. Shortly afterward the Solace came in and took them to Manila, where they were distributed among the ships of the Asiatic Fleet, a few men, however, were retained at Agana for shore duty, I being one of them. The natives of Guam are called Chamorros and they are a very kind and docile race. They speak a dialect of their own and have many quaint customs and ideas, one of which I will mention.

Great ceremonies are performed in advance of the killing of a porker. The porker is first brought forth and sized up mentally or with a tape measure, and it is then figured how many singers he will rate, as there are a certain number of children invited to participate in the festivities. The children congregate and sing each evening for a period of about two weeks.

Meanwhile, the porker is fastened to a post under the house with a thirteen-inch cord. When he is killed all hands who have participated in the ceremonies receive a piece pro rata. Great care is exercised in the measuring, because if too many singers are invited there would not be enough pork to go around.

Many Americans who have been on duty at Guam for a long period claim they can tell the weight of the pig by listening to the chorus.

TELL IT TO A MARINE

A marine is at the bottom of this story, therefore there is some reason to doubt it. I do not wish to insinuate anything against the marines, I simply state that the story is doubtful from the fact that one might say, "Aw, go tell it to a marine."

The story in question made such a strong impression among the bluejackets of Admiral Evans's fleet that it may perhaps interest others. During the summer of 1903, the Asiatic Fleet, with Admiral Evans in command, made Chefoo its headquarters while target practice was being held. At the time, there were several Chinese cruisers lying at anchor in the harbor.

On a certain ship a marine devised a great scheme which he carried out to perfection. The full dress uniform of a marine is a gorgeous affair as it consists of many bright trimmings. This marine smuggled his full dress uniform ashore, and later on, while on shore leave, he donned it, hired a respectable looking shore boat and paid a visit to one of the Chinese cruisers which lay at anchor some distance from the American fleet.

Mr. Marine was received with full honors, as he presented himself as "Colonel Somebody, of the United States Marine Corps." As it was only a friendly visit the "Colonel" was invited into the cabin where the corkscrews began to get busy. The "Colonel" not be-

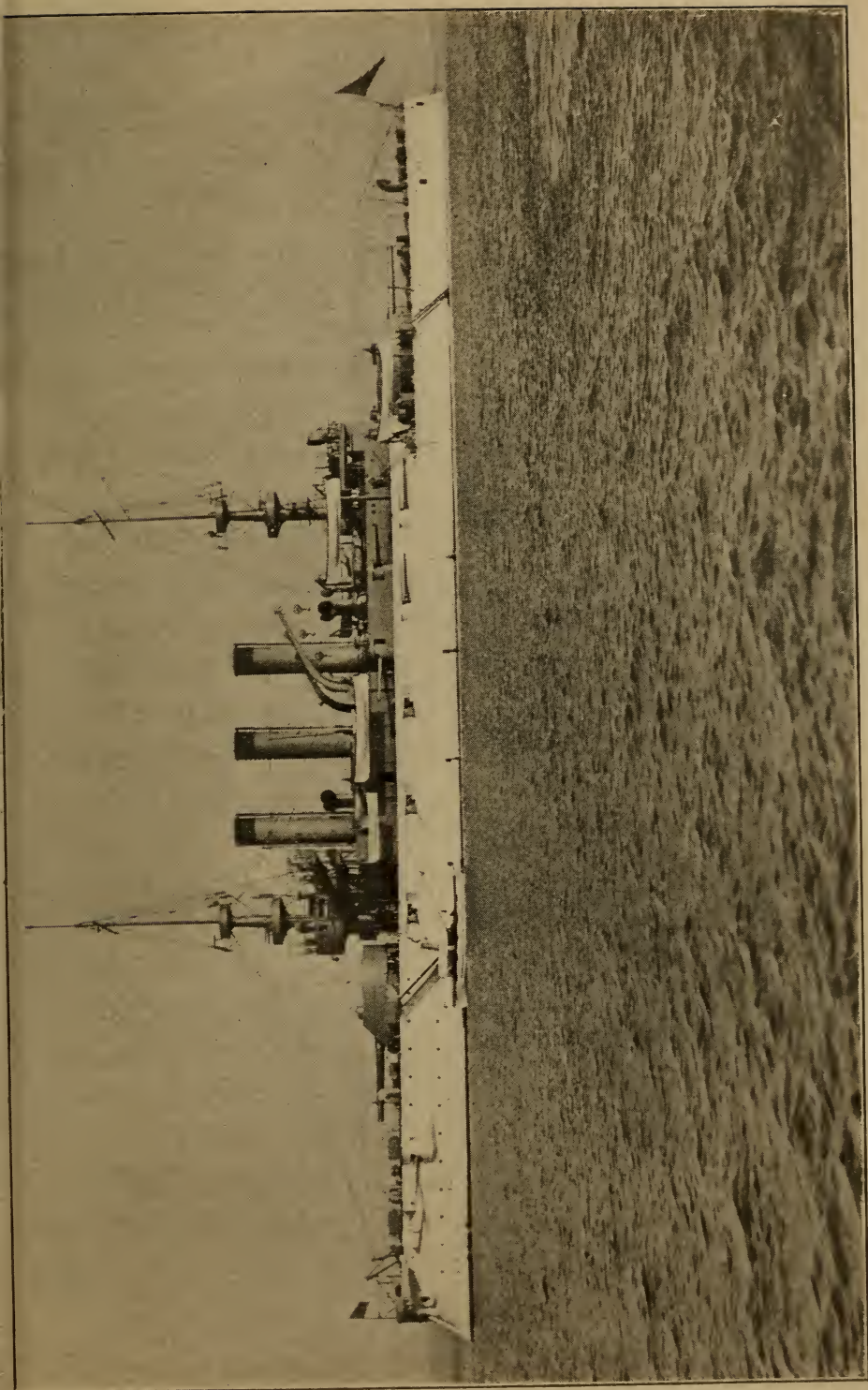
ing accustomed to such a high grade of goods, soon began to feel the effects, and ere long imagined he was a real colonel. The result was he soon showed the effects, and the officers of the Chinese cruiser, thinking him ill, ordered him to be taken back to the ship to which he had said he belonged. In returning aboard the "Colonel" did not rate any side boys. (When an officer returns from an official visit, two or more side boys, members of the seaman branch, line up at the starboard gangway and salute as he steps aboard. This comes under the heading of Naval Honors.)

A PERSONAL STORY

This story is my pride and means more to me than this book though it were made of gold. Many will doubt or be skeptical regarding its truth, but I can only say it is quite true. I vehemently deny in advance any thought of mentioning it for sympathy. The story demonstrates happiness instead of sorrow. My mother has been so good to me, that in looking back to the days of her darkness, I take great pride in allotting her this small space.

Many naval officers and enlisted men are married and when convenient their wives follow the ships from port to port.

An enlisted man's folks take great pride in knowing that their boy is in the navy and his letters are always read with great interest. Of course, women are not as



U. S. S. OHIO. The Ohio was launched by our late beloved President, William McKinley.

Photo taken specially for this book.

much interested as men in the good points of a twelve- or thirteen-inch gun; they are apt to say "war is awful" and they do not stop to consider that by having both quality and quantity of twelve- or thirteen-inch guns the prospects of having war are like the North Pole, hard to find.

Several years ago my mother went to a small country party where the guests had to remain over night. A pillow which was on my mother's bed had been used by a child suffering from eye trouble, the result being that my mother contracted the disease which caused her to gradually lose her sight.

Scores of remedies, operations and medicines were tried but they were of no avail. The lot of a blind person is a hard one, still my mother made the best of it and seemed to become reconciled.

When I enlisted in 1898, I came home often before being sent to sea. The first day I came home in uniform mother had to feel me all over to tell how I looked. Sewed on my sleeve was my rating badge, at the top of which is a white eagle made of raised work, with the wings spread out. She was able to tell that it was a bird by the sensitiveness of touch, for she exclaimed "Isn't that a pretty bird?"

During my absence my mother's sight returned naturally, and when I returned home she could stand a few feet away and recognize me. Since that period her sight has steadily improved and the day is not far

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distant when she will be able to read this book. For this I can only say "Praise be to the One who can make the lame walk and the blind see."

AN OLD SALT'S SALTY SALTINGS.

When signin' quarterly accounts say nothin if yer got more money on the books than yer thought. If short er nickel or more sey er whole lot.

If yer have dirty clothes wash 'em ter-day; ter-morrow may be cloudy.

Never buy any terbacker, its too much trouble to carry it. Shipmate Bill spells his name E-A-Z-E-Y.

Spare not ther elbow grease, Uncle Sam don't care for expenses.

After yer hunger is satisfied then's yer time ter tell 'bout ther fifteen dollars per week that yer made on ther outside.

If yer could only sen' yer hammock ashore ter the wash yer wouldn't have to scrub it.

Don't holler 'bout not re-enlisting, ther louder yer holler ther quicker yer come back.

Don't tell ther fellers how yer did it, let others do it fer yer.

Yer needn't get tattooed ter be a sailor, there's others who like salt horse.

Write often ter yer mother, she don't fergit yer even if yer are twenty-two.

Don't tell 'bout ther rich uncles yer got what's workin' on ther poor farm.

Never be afraid of er big man, er turpeder boat kin outrun er battleship.

When work's on han' cut out their eddicut, 'taint "Good mornin' Bill, have yer used Pear's soap?" Its "Hey there! grab that scrubbin' brush."

Er enlistment is like ther tide, it runs out.

'Taint alwus ther man behin' ther gun that does ther work, all guns has sights on their sides.

Don't throw water on anyone ter make them think it's rainin.'

When yer git home don't tell 'bout ther sea-sarpints yer saw.

Alwus respect yer superior officer, yer may be one yerself some day.

Many when breakin' their liberty say "Oh, I don't care," but after the'r punished they often look at ther bulletin board ter see when they kin go ashore again.

Er man thet makes five shots an' five hits wid er twelve-inch, outranks er feller makin' eight shots an' four misses.

Don't pour oil on troubled waters, it's bad fer ther eyes.

Many wonder why er sailor likes ther sea, why does er duck swim?

Put yer money in ther ship's bank if yer 'tends ter get married when yer gits home.

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Have ambishun, don't be a sea-ladder fer those what has it.

An idear's like er dollar bill at er fair, it's easy changed.

Uncle Sam ain't greedy, he often calls twice six er baker's dozen.

Ther's many er slip 'tween cup an' lip, so steady comin' up ther port gangway.

Some call er sailor er flatfoot, people in Oregon are called webfooters.

Money's made round ter go round, but we travel round fer ours.

Uncle Sam's ther opposite from whale huntin', he don't pay jaw-bone.

Don't tell how yer would do it, but do it.

Never think ther ship can't git erlong widout yer, if yer does, don't think aloud.

Mermaids are like sea-sarpints—doubtful.

Don't say can't, 'taint regulation.

Stocks are like er ship, they rise an' fall.

When yer git promoted don't think yer a whole schoolhouse, ther's other pupils 'board ship.

Don't judge people by ther gunboats on ther feet, they may hev corns.

When yer unable to go ashore, work ther toothache racket. Call early at ther sick-bay an' hev' one ther main chewers out uv whack.

Ther day uf shiver yer timbers is past, we now got iron ships wid petrified wood trimmin's.

Some people only drinks licker when in agony, lots has pains all ther time.

'Taint all gold thet glitters, ther's nuff bright work 'board ship ter start er brass foundry.

GOOD MORNING.

In Japan the word "ohio" (spelled ohayo) means good morning, so when the crew of a warship are ashore on liberty they are greeted with many polite bows and "ohios."

On board the battleship Wisconsin were two chums who were born and raised in the State of Ohio, so when the ship entered the harbor of Yokohama both of the young men were anxious to go ashore and see the country of which they had heard so much.

Shore leave was soon granted and the young men went ashore and wandered about the city and saw much of beautiful Japan. In the morning when they prepared to return to the ship they were greeted with many polite bows and "ohios." After hearing the word "ohio" for about the thousandth time, Bill inquired of Jim, "I wonder how they knew we are from Ohio?"

PRESTO! CHANGE!

One morning while drinking my coffee aboard the

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Oregon I sat near a chest on which Bill and Jack were seated. Bill jumped up, went to his mess locker and returned with a tin of condensed milk; he dipped out a spoonful, put it into his coffee, and as he started to return the milk, Jack inquired "How's chances?" Bill replied "It ain't mine." In the meantime, while Bill is returning the tin of milk, Jack calmly took the spoon out of Bill's cup and scraped off the condensed milk into his own and then returned the spoon. When Bill returned he stirred his coffee without any results and finally concluded that the milk was of a poor quality; Jack agreed with him.

WASH DAY.

When the Yosemite was first stationed at Guam the food question was a difficult one to solve because Guam is located in such an isolated place. The transports were few and far between. There is now a cold storage plant at Guam and vessels call there more regularly.

The principal item on the bill-of-fare at that time was the old stand-by, beans. There was one lot of beans that had no doubt made several voyages around the Horn before we got them, for it required three days of steady cooking to make them eatable.

There are large coppers in the galley where beans are cooked by steam. Whenever a batch of beans was put into the coppers, which was often, a persuader in

the form of soda was also added. The supply of soda became exhausted and as we were unable to replenish our supply for some time salt-water soap was used instead. There is but little difference between the two for the soap is quite strong.

I was somewhat skeptical when the cook mentioned that he used soap to soften the beans. One day I happened to pass by the gallery and the cook called me in and lifted up the lid of the copper and said "See those beans in there?" He took a bar of "paymaster's boquet" (nickname for this kind of soap) and calmly shaved it into the copper. He then stirred the beans with a large paddle, causing a heavy seafoam to gather. When the soap had become dissolved he informed me that the beans would be ready for breakfast next morning.

TWO "OLD TIMERS" GROWLING.

Time: Summer, 1908.

Place: On board the U. S. S. Oregon at anchor off Chefoo, China.

Characters: William Brown, *alias* Stormy, on account of being quite windy. James Murphy, *alias* Spud. There are many spuds, but this is the original one.

Enlistment Record: James Murphy, boatswain's mate first-class, age, forty-five; standard height; vocation previous to joining navy, policeman; full-rigged

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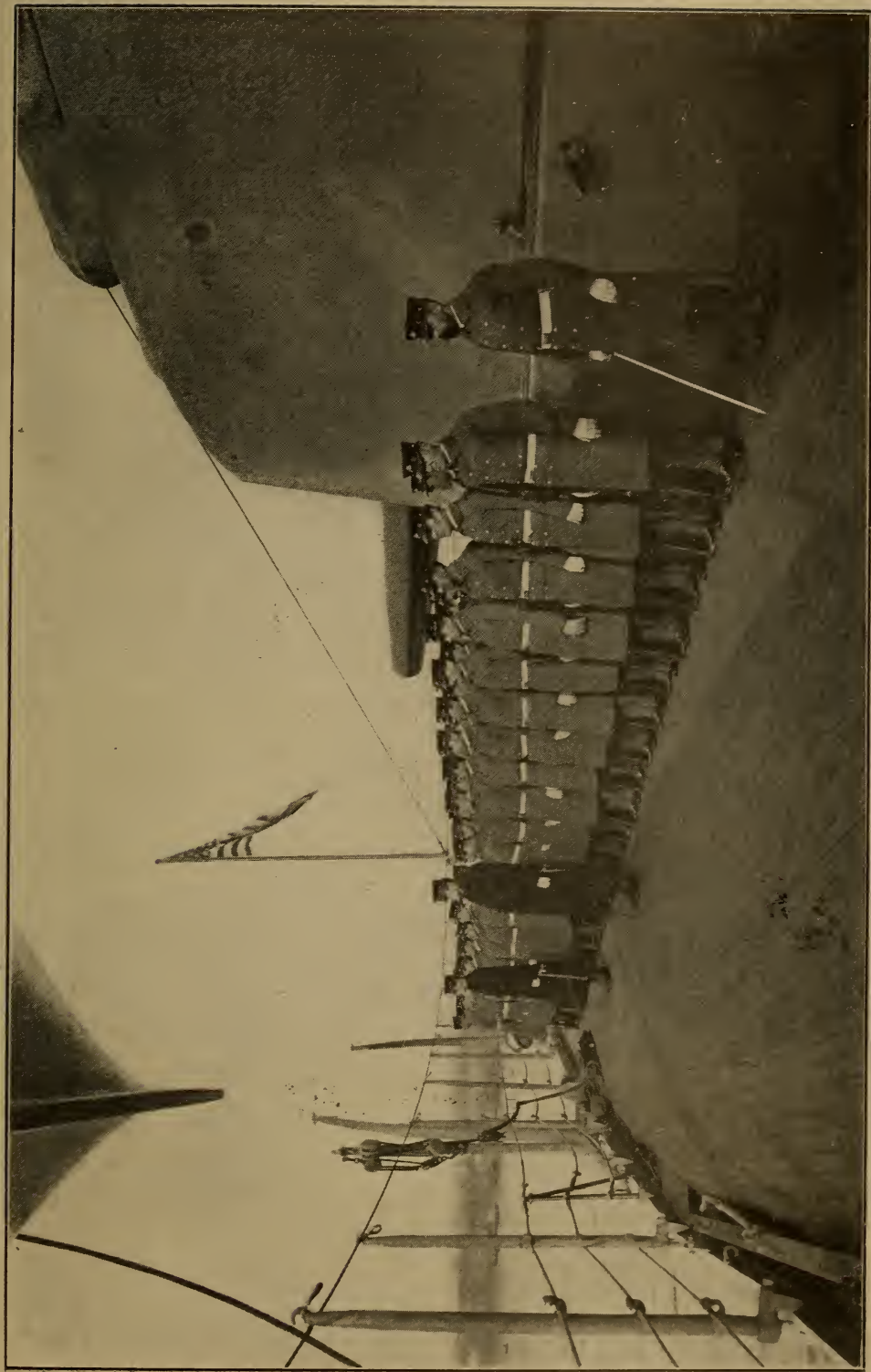
ship tattooed on breast; deep voice; was born in Shamrockville; has served twenty years honorably; disposition cheerful; a competent man; well liked by officers and crew. Spud is the boatswain's mate of the first division of the Oregon and has lately re-enlisted.

William Brown, chief gunner's mate; age, thirty-five; vocation previous to joining navy, gasman; seventeen years honorable service; height, six feet; large displacement; also large beam; born in Missouri; disposition cheerful. Stormy has been a shipmate with Spud on three previous occasions.

Stormy has just arrived aboard the Oregon and is ignorant of the fact that Spud is also aboard. After stowing away his luggage he strolls about the ship meeting old shipmates. As he steps out on the fore-castle he meets Spud, who is sitting on a chest filling his woodstock pipe with navy plug:

Stormy: "Hello Spud old boy! (they shake hands) I thought you said you wasn't going to ship over again. I knew the meal pennant would fetch you back, and you done right as there is hard times ashore."

Spud: "Well I'll be torpedoed! Where did you come from? I did intend to remain ashore as I bought a chicken farm and kept it in commission for threee months. The chickens wouldn't lay so I sold the whole outfit and shipped over. No more farming for me, Stormy. I thought it would take an Act of



WAITING FOR THE ADMIRAL. The Admiral rates many honors, such as marine guard, the band, etc.



NAVAL Y. M. C. A. BUILDING, BROOKLYN, N. Y. This building is for the exclusive use of the enlisted men when ashore.

Congress to take the political job away from you that you had on the Philadelphia.”

Stormy: “Haw! haw! haw! You old fogie! You must have looked pretty piping the chickens to muster. I lost my job when the Philadelphia was put out of commission so they sent me out here on the Solace and I caught the Oregon. You remember the Jimmy Legs that used to be with us on the Philadelphia at Panama? Well, he deserted and they caught him in Frisco and gave him six months.”

Spud: “I heard about Jimmy, but I thought he only got busted. Say Stormy, the ship’s a regular home and we live like a king as the commissary steward is a peach. Who do you think is our executive officer? It’s Mr. Carrol who used to be with us on the old Mohican in eighty-nine.”

Stormy: “I met Mr. Carrol at the gangway as I came aboard and shook hands with him. They are going to make another dozen warrant gunners and I’m going up for it, do you think I’ll make it. Spud?”

Spud: “Sure, Mike, you’ll make it if you’ll learn about spontaneous combustion and all that rigamarole stuff, you got a great head on you and had a good learning and I hope you’ll make it. I’m going out with a pay day this time; I’m stowing it away on edges in the ship’s bank as I intend to get “hitched up” when I get back for I’ve got a dandy girl.”

Stormy: “Hee haw! Hee haw! Is the gal’s name

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Maud? You certainly would look sea-going coming down the street with Missus Spud on your port beam. Come out of it man! As soon as she got your pay day she would leave you and you would have to re-enlist. Better look out, you may fail as you did with the chicken farm."

Spud: "There ain't no use in guying me, Stormy, I haven't forgot the time you got tangled up with that mermaid in Oakland. She got your whole pay day and you didn't see the inside of a church either, so you had better keep quiet."

A VALUABLE CURIO.

While stationed at Guam, the Yosemite made periodical trips to Japan. On one of these trips many of the crew purchased tea sets to take home to the dear ones. You have to be quite smart to get the best of a Japanese in buying a tea set. They say it is number-one kind and praise its merits in various other ways, incidentally asking a price much higher than it is really worth.

The Yosemite had a donkey boiler which has been used to supply steam for the auxiliary machinery while lying in port. This boiler was located on the upper gratings directly over the main boilers and was not in use at the time the tea sets were purchased, so they were stored in and around it. Of course, while lying at Yokohama only one of the main boilers was

fired so that everything around the donkey boiler was quite cool. When the main boilers were fired and the ship put to sea the heat about the donkey boiler was terrific, particularly when we neared Guam and struck the tropical climate. Many of the men on watch in the fire room were wondering where those little pieces of dough were coming from which were dropping regularly through the gratings. One of the men picked up a piece and found it was decorated in bright colors and at once concluded that the tea sets were being melted by the intense heat. Several of them went to the donkey boiler to look after their tea sets—it was laughable to see—where there once had been beautiful, dainty, sixty-two piece tea sets there now existed a trust, conglomerated and consolidated. Since the tea sets were worth only about seventy-five cents each, the individual losses were not great.

FULL RATIONS.

Two bluejackets were arguing one day over the wages paid for help in a certain State. As the argument became quite bitter they decided to allow a third person settle it. Upon being asked for his opinion the referee expressed himself as follows: "When we lay at the Brooklyn Navy Yard on the old Lancaster, a draft of recruits came aboard and among them were two brothers who came from the State of ————. Later, I became well acquainted with one of them who

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told me why they had enlisted. He said that he and his brother had worked five years for a farmer in the State of ——— and they had never received a cent, so one Fourth of July they asked for two dollars in order to go to town and see the circus. They were refused the money so they left him and joined the navy."

A FEW SALTY RIDDLES.

In Manila Bay, May, '98. What was the question not a question?

Do we did it?

What parts of a ship are farmlike?

Jackasses, hawsers and crow's nest.

Why are there no labor strikes or walking delegates in the navy?

All have to belong to the same Union before Uncle Sam will enlist them.

Why do battleships make better watch dogs than cruisers?

They bark louder and their skin is thicker.

Why are women folks so anxious to get a sailor cap ribbon?

Because a ship is called "she."

What part of Jack's uniform reminds you of an admiral?

His blue collar, it has two stars thereon.

What well known nation has no navy?

Why, Carrie.

Where is the dryest place aboard ship?

The brig; there are bars all around but not a drink.

What would make the best wife for an old salt?

A mermaid, she couldn't kick.

Who could outsleep Rip Van Winkle if only given the opportunity?

A marine.

Why did the Oregon make that famous trip in '98?

To get to the other side.

When does a bluejacket think number thirteen unlucky?

When there are thirteen men at his table and only twelve pieces of pie.

Why is a submarine boat like a salted mine?

It takes water to float them both.

What parts of a battleship are like the army?

Her masts, they are both military.

What is the difference between a greyhound (ocean steamer) and a bulldog (the Oregon)?

The greyhound knows how to run; the bulldog knows how to fight.

Why is the sword mightier than the pen in the navy?

Officers draw more salary than yeomen.

When does an old salt get salted?

When he gets married.

Why is a man-o'-war like a placer mine?

She gets cleaned up often.

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When a ship is at sea what does her rudder remind you of?

A poor man; it is always working.

Where are Uncle Sam's initials the most conspicuous?

On the sailor's caps.

What is the difference between an admiral and a policeman?

The policeman carries his one star while the admiral has a big ship to carry his two.

Why are ships, clergymen, sailors and lovers in the same boat?

They all make knots.

What parts of the machinery remind a married man of his mother-in-law?

Crank, cross-head and jacking-over engine.

What is like a ship without a rudder?

A saloon without a side door.

A BEAR STORY

Among the many illustrations in this book is one of a bluejacket and a big bear sleeping peacefully together. This bear is known as Brunski and was brought aboard ship when a cub.

The pets aboard ship (known as mascots) become greatly attached to the crew and much amusement is derived from them. The naval photographer (Enrique Muller) who took this picture was not on good

terms with Brunski owing to the fact that the bear objected quite seriously to having his picture taken.

When Mr. Muller went aboard the cruiser Chicago to take some pictures, he thought it would be interesting to take Brunski's also. The bear happened to be sitting on the railing when the photographer came aboard so the camera was set up and preparations made.

Brunski was taking great interest in the proceedings. When the photographer placed the cloth over his head to get a focus on the bear Brunski decided to take a hand. He jumped down from the railing and made a rush for the camera. The photographer saw him coming and being quite frightened he made for the gangway and ran ashore (the ship was tied up to the dock.)

One of the crew took the bear away from the camera and the photographer returned aboard, packed up his camera and went home. A few days later the photographer's son had some pictures to take aboard the Chicago so his dad told him to take a picture of the bear also.

The son being unaware of the trouble his father had with the bear, went aboard and found Brunski in a good position for taking a picture. The camera was soon set up and when the cloth was placed over the photographer's head, Brunski became angry and made a rush for the camera. The son saw the bear coming toward him and got out of the way in time. Brunski

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struck the camera a blow with his paw and demolished it.

When the bear was led away, the son returned aboard, cleared up the wreckage and going home, told his father of the trouble, which caused him to smile.

One day the photographer caught Brunski and a bluejacket sleeping soundly together so he decided to take another chance. The results were quite satisfactory as the illustration reproduced in this book shows.

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